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ABSTRACT

This report is a revision and expansion of an earlier research report that described the design of the University of Guelph's documentation system for the organization of government publications within university libraries. The design of the Guelph document system represents a deliberate departure from cataloging and classification theory and standards. The document code is a shelf location device and is structured only as is necessary to bring publications within government jurisdiction into appropriate relationships. Other codes were designed to provide quick sorting capabilities through a data processing system and in no way necessitate involvement in rules, regulations, or principles of cataloging. This report describes the initial investigation, and the development of a new method for organizing government publications made possible by new technology. The topic is covered in five parts: (1) a statement of the problem, and an identification of the traditional methods of arranging and processing government publications in libraries; (2) analysis of the design of the Guelph document system; (3) a description of the codes which are the basis of the system; (4) a discussion of the operating system as it has developed including changes, costs, equipment, user acceptance, and cooperative use; and (5) a manual of procedures for the system as used at Guelph. Related references and a bibliography conclude the report. (THC)

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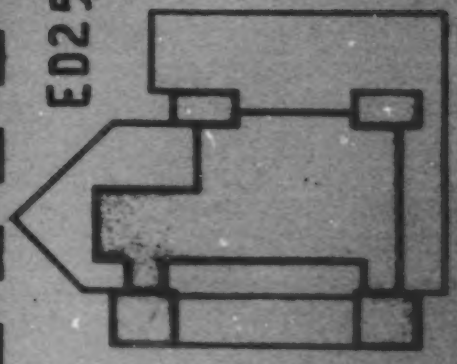

THE LIBRARY UNIVERSITY OF GUELPH

THE GUELPH DOCUMENT SYSTEM

by
Margaret Beckman
Sara Henderson
Ellen Pearson

Report No. 3

IR051075

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THE GUELPH DOCUMENT SYSTEM

A revision and expansion of an earlier report, Documentation system for the organization of government publications within a university library. With a manual of procedures.

by

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Report no. 3.

1973

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Preface and Acknowledgements.

The system which this report describes is the result of the conviction of Lachlan F. MacRae (now Associate National Librarian of Canada, formerly Chief Librarian, University of Guelph) that it should be possible to provide access to individual titles in a government publications collection, and to provide that access cheaply. He didn't know how it could be done, but he suspected that computers might provide a new approach to the problem.

Accordingly he hired one of the authors, Margaret Beckman, to design such a system for him at the University of Guelph Library. Documentation system for the organization of government publications within a university library, describes the research which led to the design of a test system in 1967. That report was a revision of a thesis accepted by the University of Toronto, School of Library Science in 1969. Professor William Kurmey who directed the thesis research, provided invaluable guidance throughout the design of the system.

Once designed, Larry Porter (now Assistant Librarian, University of Guelph and formerly Head of the Systems and Data Processing Department) provided the file design and programming base for the system. Ann McLewin, David Paterson, Sue Reed, Herb Schwartz, and Merv Hrabi, also of the Guelph Library staff, assisted in later working sophistications in this area.

The first Director of the University of Guelph Library Documentation Centre where the document system was implemented in 1967 was C. Lan Sun, now of Shell Oil, Canada. Mr. Sun translated a theoretical design into a working system, finding the computer a "powerful" tool in an information system. Robert Logan, now head of the Circulation Department, provided capable interim guidance until the present Director, Ellen Pearson, arrived in 1969. Mrs. Pearson has constantly improved and enriched the system, without changing its original concept.

At this time of writing several libraries in Canada and the United States have implemented or are considering implementation of the "Guelph document system". Because of this demonstrated interest it was felt that it would be useful to revise and update the original research report, and to include descriptions of the actual operating techniques which have proved effective.

No subject in librarianship is more controversial than the handling of government publications. Although gratefully acknowledging the assistance offered by the people mentioned above, as well as many others, the authors assume complete responsibility for the content and points of view reflected in this report.

Particular mention should be made of the assistance in the production of this report received from members of the University of Guelph Library staff. Mrs. Judith Stoffman, Information and Orientation Division, updated the original bibliography. Mrs. Win Fletcher of the Library Administration Office patiently typed several drafts of the final manuscript. Their work is sincerely appreciated.

Margaret Beckman,
February, 1973.

Foreword.

As emphasized throughout this report, the design of the Guelph document system represents a deliberate departure from cataloguing and classification theory and standards. The document code is a shelf location device and is structured only as is necessary to bring publications within government jurisdictions into intelligent relationships. The other codes were designed to provide quick sorting capabilities through a data processing system and in no way necessitate involvement in rules, regulations, or principles of cataloguing.

By transcribing the title page of a publication as it appears, and assigning codes to make explicit the function of each data element contained, it is possible to satisfy the requirements determined for the system: to provide a quick and economical method of in depth access to individual publications within the government collection.

If a cataloguing and classification system had been desired, the already accepted and eminently successful ones in use throughout the country would have been followed.

Margaret Beckman,
February, 1973.

Chapter I: Introduction.

No two university libraries - or any libraries, for that matter - are exactly alike. But the situation in 1966 in the government publication collection of the University of Guelph Library, was probably similar to that in many libraries in Canada and the United States.

The University of Guelph received its charter as recently as 1964. It was formed by the amalgamation of three existing provincial colleges: The Ontario Veterinary College (O.V.C.) founded in 1862; the Ontario Agricultural College (O.A.C.) founded in 1874; and the MacDonald Institute founded in 1902. Wellington College, a faculty for Arts and Science, was founded in 1964 at the time that the charter was issued to the University of Guelph.

In 1966 each of the four colleges maintained divisional libraries with departmental libraries existing, in addition, in O.V.C. and O.A.C. With a centralized library system planned for a new library building, processing for the divisional libraries was centalized. The departmental libraries were, to a large extent, completely independent.

None of the divisional or departmental libraries at the University of Guelph had been designated as depository libraries for government publications, but many had been receiving all publications from certain jurisdictions or agencies in selected fields. Hence, in addition to holdings of the official documents of Canada and Ontario, publications from most federal, provincial, or state experimental farms, agricultural or fisheries research stations, or veterinary centres in the world had been received on a regular basis. Publications from such United Nations agencies as the World Health Organization, Food and Agricultural Organizations, and UNESCO had also been received on a regular basis in addition to selected material in fields other than those noted above from foreign countries.

In July, 1966, the government publication collection of the University of Guelph Library was organized and arranged in a variety of schemes. Monographic publications had been catalogued and classified as separates and were shelved with the regular collections either by Dewey or Library of Congress classification. Research reports and bulletins from experimental farms, agricultural, or fishery research stations, research laboratories, etc., had been considered to be periodicals and were bound and arranged alphabetically in the periodical stacks of the Agriculture and Science Divisional Library. Current titles from these sets were being collected in pamphlet files in the same library.

Official documents, such as the Debates, Journals, or Sessional papers of Canada and Ontario, together with annual reports or other publications from government departments were housed, basically alphabetically, in a government documents room in the Agriculture and Science Divisional Library. Any set or title which was considered more appropriate to one of the other Divisional Libraries was assigned to that Library and was shelved there in a separate documents section.

The situation with respect to government publications in the University of Guelph Library collections was, therefore, rather chaotic. A user might find the location of a wanted document through the public catalogue, but for more than half the material held a search of the shelves was his only recourse. The Cataloguing Department was unable to cope with the increasing number of non-government publications which it was expected to process, and was falling behind with the documents which were assigned to it.

Although in the past it was considered possible for libraries which were not depositories for government publications to incorporate government titles into their catalogued collections with no difficulties,[1] increasing emphasis on research, both at the undergraduate and graduate level, had placed impossible

cataloguing loads on most libraries. In addition, the technical or research report, whether issued by a government agency or issued independently but sponsored by a government agency, had added to the amount of material in need of analysis. All but the smallest library was facing the same basic problem as was faced at Guelph: the difficulty of assimilating into the library system extensive collections of government material, much of which was of a complicated serial nature, requiring detailed analysis in order to provide other than superficial access.(2)

How should a library treat its government publications? Should they be segregated on the basis of "origin, format, method of publication and method of indexing" as suggested by Jackson,(3) or should they be placed in the library's general collection, fully catalogued like other publications, as Osborn insists? (4) At the same time information scientists or documentalists were developing retrieval systems which seemed to have relevancy to the problems of providing access to government publication collections. It appeared practical to investigate these documentation techniques in addition to traditional organizational methods, and to determine if some of the methods used in specialized areas could not be applied in a more general way to the problem of organizing government publications within university, college or public libraries.

This report describes that investigation, and the development of a new method for organizing government publications, a method made possible by new technology. This development took place at the University of Guelph, Ontario, Canada, in 1966, and the system, which has been operating since 1967, has come to be known as the "Guelph document system".

The topic is approached in the following manner:

1. A statement of the problem, and an identification of the traditional methods of arranging and processing government publications in libraries.
2. An analysis of the design of the Guelph document system.

3. A description of the codes, which are the basis of the system.

4. A discussion of the operating system as it has developed, including changes, costs, equipment, user acceptance, and cooperative use.

5. A manual of procedures for the system as used at Guelph.

A definition of terms used within this report may be helpful, since some of the terminology as developed at Guelph may differ from other use.

1. Government publication

The term government publication as used in this report is a very broad one, and is taken to mean any publication emanating from any level of government, or from its agencies, bureaux and branches, or from any source which produced a publication using government support. This includes research and technical reports, either issued by government agencies or sponsored by government grants.

2. Separate collection

A separate collection for the arrangement of government publications is used to indicate that government publications are physically separate from the main library collection, and that access to the collection is not obtained either through the general library classification scheme or the main public card catalogue. (5)

3. Integrated collection

An integrated collection describes government publications which are catalogued and classified with all other publications; i.e., they are shelved by classification throughout the library, and access to them is through the main public card catalogue. (6)

4. Arrangement of publications

Arrangement is defined as a physical organization of publications on library shelves. In most libraries the arrange-

ment is in classified order dependent on the system of classification used by the library. However, arrangement can be without an actual notation scheme and could be alphabetic by author or by country of origin, by size, date of publication, etc.

5. Organization of publications

Organization of publications is used in this book to signify that the content and other data elements of a publication are considered in addition to and in relation to their physical location, and that some method of providing access, other than through physical arrangement, is involved.

6. Bibliographic access

The term bibliographic access is used to describe the action of providing for retrieval through identifying data elements - author, title, date, publisher, subject, etc. - of a publication, usually through an index or catalogue, as opposed to physical access, which is direct retrieval of the publication itself.

7. Display

Display is the visual manifestation of bibliographic access - for instance, the listing of the data elements relating to a publication in the main public catalogue or in an index.

8. System

A system is a set of objects with relationships between the objects and their attributes.

Finally, it should be emphasized that the system described in the following chapters borrowed heavily from ideas developed in other libraries or information centres. As each idea was analysed and accepted, adapted or rejected, a progression of thought evolved which led logically to the next step. The system should not be studied without understanding either this theoretical base or the other methods of information organization - particularly government - on which it depends.

Footnotes: Chapter 1.

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2. Lundy, Frank A. and Eugene M. Johnson, "Documents in the divisional library," College and research libraries, V.19 (November, 1958), p.465.

3. Jackson, Ellen P. Administration of the government documents collection, ACRL monographs, no. 5 (Chicago: Association of College and Reference Libraries, 1953), p.1.

4. Osborn, Andrew H. Serial publications; their place and treatment in libraries (Chicago: A.L.A., 1955), pp.27, 28, 186.

5. Caldwell, George. "University libraries and government publications, a survey," College and research libraries V.22 (January 1961), pp. 30-33.

6. Ibid.

Chapter II: Traditional organization of government publications.

As a result of a survey conducted in 1960 at the University of Kansas, Caldwell stated that "in spite of the oft-expressed desire to treat government publications like any other publications and the desire for single catalogues and unified collections, there are likely strong practical reasons which cause so many of these research libraries to give their documents special treatment". [1] This survey is useful to indicate the traditional patterns of organization of government publications in university libraries. The sample used was the membership of the Association of Research Libraries, and the results were as follows:

Completely separate collections:	8
Predominantly separate collections:	4
Integrated collections:	6
Mixed systems (partially separate):	5

Thus, of the responding libraries "three-fourths give some sort of separate treatment to documents, and only about one-fourth treat documents completely like other publications". [2]

A survey at the University of Michigan 1964 [3] and another at Massachusetts in 1965 had similar results. The Massachusetts survey, [4] for example, showed the following:

Separate collection:	9
Integrated collection:	7
Combination:	10

Early surveys by Campbell, [5] Eastin, [6] and Jackson [7] had results little different from these recent surveys. University libraries have traditionally used one of two different methods or a combination of the two for the organization of government publications, and the library literature attests to the continued concern about the merits or disadvantages of the two systems. As Downs states in his recent survey of Canadian academic libraries: "There is some difference of opinion on one matter relating to government documents: how they should be organized for effective

use. Perhaps the most common plan is to maintain them as a separate collection, with a specialist in charge. An alternative is to treat them exactly like any other books, journals, pamphlets, maps, etc., coming into the library - classify and catalogue them fully, record them in the general library catalogue and intershelve them with non documentary publications".(8)

A The Integrated Collection

In 1939, Erlandson pointed out that "if government publications are to be part of the general collection of the library, they are of course treated as other books. They are classified by the same system, catalogued by the same policies and processes, and shelved in the same location as other books".(9) She went on to describe what she considered the advantages of the integrated collection.

"1. All material on a certain subject is classed together, whatever its source.

2. There is only one classification system for staff and patrons to learn and use.

3. Government publications are probably used more by the general public under this system."(10)

Disadvantages were also discussed.

"1. The collection must be catalogued in order that there may be a key to its use. This means added expense for the library, and delay in getting the publications onto the shelves for use.

2. Methods of shelving of unbound documents and of the serial set may become a problem.

3. Space in the general stacks must be adequate to receive many volumes per year."(11)

Since 1939 the increase in government publications and the diversity of subjects covered in these publications has cast doubt in university libraries on the value of incorporating documents into the general collection. If scientific research reports sponsored by the government are included in the government

publications collection, traditional methods of cataloguing might well be impossible. "One estimate puts the number of technical documents published in 1961 at 658,000, and the number to be published in 1970 at 1,143,000."(12) Norman Clarke summed up the problem as follows: "The factors of increasing volume and diversity, combined with variables such as the expanded employment of deposit as a system for the distribution and acquisition of government publications, the almost continuous rise of cataloguing costs at a time when the effectiveness of traditional library concepts of the catalogue is being seriously challenged, and the growth, increasing sophistication and availability of centrally published indexes to government publications have led many librarians to question, at least partially, the applicability of traditional library cataloguing, classification and storage methodology as the organizational solution to the body of government documentation".(13)

An additional argument against the integrated collection stems from what may be a difference between the type of use of a government publication collection in a public reference library and the type of use in a university library. Low points out that one of the compelling reasons for a separate documents collection as opposed to an integrated collection is the desire, on the part of the faculty, for arrangement by issuing body.(14) Caldwell, in his survey at Kansas, discovered that faculty members in the departments which use documents most heavily and regularly - Political Science, History and Economics - favoured a separate collection.(15) This finding is supported by the Association of Political Science teachers in Ontario universities.(16)

With this stated preference for the separate collection by many university faculty members in addition to the reasons presented by Clarke, it is not surprising that the statistics shown in the previously discussed surveys indicate that the majority of university libraries have chosen what is called the separate collection for government publications.

B The Separate Collection

The advantages and disadvantages of the separate collection were seen by Erlandson in 1939 to be as follows:

Advantages:

"1. The separate collection in charge of a librarian who has specialized in the subject can give better reference service. Because the one in charge not only services the publications, but checks them in and enters them in whatever shelf list or index is provided, he is more familiar with the arrangement and content than a librarian who works with government publications in a more casual way.

2. The time element is an important one. The separate collection with its own classification makes possible the use of government publications almost immediately after their receipt. If the collection is classified by issuing bureau, the publication need not be sent to any other department in the library, but can be put directly on the shelves.

3. The separate collection may be less expensive because it does not require regular cataloguing.

Disadvantages:

1. It separates government material from other material on a subject.

2. The collection is seldom a complete collection, because many publications must be available in other departments.

3. In order to be of greatest service, the separate collection depends on the cooperation and training of people in charge of other department in the library. Assistants in the reference department, for example, must recognize a document question and refer it to the documents room, and they must know in what field government publications can supplement periodicals and reference books.

4. There is need for much duplication. The separate collection tends to be merely a reference collection, and if publications are to circulate, as many of them should, they must be duplicated." (17)

In arranging a separate collection the most common practice is to use the Superintendent of Documents classification plus similar supplementary schemes, or to arrange the documents alphabetically by issuing body.[18] Bibliographic access to the collection is provided by dependence, either largely or entirely, on printed catalogues and indexes.[19]

In addition to the advantages and disadvantages to the separate collection outlined above, other considerations should be discussed. If a collection of documents in any given university library were to consist entirely of publications from the United States federal government, the Superintendent of Documents classification linked to the monthly Catalogue would probably provide the best access possible to that collection. However, most Canadian university libraries will have at least the publications of the following major jurisdictions:

U.S. Federal government
U.S. State governments
Canada. Federal government
Canada. Provincial governments
United Kingdom
France, Germany, Russia
Commonwealth countries
Local government
United Nations and its agencies.

The majority of the above jurisdictions do not supply a classification or an index to their own publications.[20] If the approach to the publication is by author (personal), title, subject, or report number, several different indexes will have to be searched; and unless the library is supplying its own index for unlisted material, much will be incapable of retrieval.

Nor do comprehensive subject indexes satisfy the access needs of many of the research documents under discussion. A recent study of the literature of agricultural economics[21] showed that while 80 per cent of the material was either published directly or indirectly by a government department such as the United States Department of Agriculture, only 33 per cent of the titles were

indexed in this field: the Bibliography of Agriculture or the Agricultural and Biological Index.

The resulting situation in a university library with a separate collection is one of a multiplicity of separate arrangements (usually issuing body) on the shelves, some with their own notation schemes linked to their own indexes, many without. To find material either by subject, personal author, or title, many different indexes must be used, or the user must go through the items in a likely jurisdiction title by title on the shelves. Of necessity, also, great dependence is placed on the memory of the Documents Division staff. With the present mobility of all library staff, this tends to be a precarious dependence, at best.

Many libraries have developed a compromise scheme which links both the cataloguing done for the integrated collection to the indexes available for the separate collection. Entries listed in printed catalogues are substituted for entries in the library's catalogue.(22) The simplest way of linking the card catalogue to the indexes is to provide "see also" cards in the catalogue.

Although this substitution as a bibliographic device is usually association with a separate government publications collection, integrated collections are also making use of this practice.(23) This has led to what is really a combination of the two traditional systems for organization of government publications.

C The Combination System

In the integrated collection a combination system is provided by cataloguing the government serials and sets in the catalogue department without analytics, and making use of reference cards which refer to printed indexes. Markley suggests that "notes should be added to the main entries for serials and sets, in-

forming the catalogue user that more complete or analytical cataloguing is available in the printed indexes".(24)

Unfortunately, a major disadvantage to this scheme is the lack of uniformity between either rules of entry or subject headings used by the Library of Congress and those used in the Documents Catalogue.(25) Although the new Anglo-American Code for Cataloguing would partially alleviate this problem since it calls for direct entry under the name of the body, the Library of Congress policy of superimposition will not make the effect of the new code applicable for quite some time and may well add further to the confusion.(26)

A distinct disservice to the user in this combination system is that of complicating the location of the actual publication wanted. "In order to save their users the necessity of traversing the repetitious path from the initial catalogue search to the index for the location, for the analytic and then back to the catalogue"(27) some libraries write the classification number of the serial or set in the margin of the Document Catalogue or other index, opposite the entry for the document. With the acquisition of technical and research reports in any great numbers in addition to a normal selection of official documents, or in a depository library, this practice might be almost as time consuming as normal cataloguing, albeit less demanding of the space in the card catalogue.

An additional disadvantage of the partially catalogued, partially indexed government collection is expressed by Campbell: "Librarians and others who are in favour of cataloguing documents may point out that the inclusion of government material in the card catalogue, though incomplete, may lead the reader to further researches in government catalogues; but it is also true that the inclusion of certain selected materials in the card catalogue may cause the reader to believe that all government documents are catalogued because some of them are".(28)

IV New Schemes for Organizing Government Publications

Dissatisfaction with one or more aspects of either of the traditional or combination methods of organizing government publications has led several libraries to develop new schemes for organizing their government publications. Two of these are discussed:

1. Oregon State Library

Although not designed for a university library, the scheme developed at the Oregon State Library could be applied in any large library. "Under the plan, instead of classifying fully each separate (publication) as an individual item, the agency issuing the document is classified" using classes for annual or biennial reports of the agency as a guide in assigning numbers. In the card catalogue under the agency heading, the arbitrary heading "General publications" is assigned, and individual titles issued by the agency are listed as contents on the main card, chronologically by year of publication. The year is included in the call number and a separate set of catalogue cards is made for each year's publications."(29)

Although this scheme gives prominence to the issuing agency which makes it more compatible with the indexes, access to the subject content and personal authors, title, or report number of individual items within a series is neither provided in the catalogue nor linked to the indexes.

2. Oklahoma State College Library

The Oklahoma State College Library has also developed a method for handling government publications in a separate collection.(30)

Initially the documents were arranged in a separate collection by issuing body without the aid of any classification symbol. Although Oklahoma was satisfied with the arrangement,

increase in the number of documents and increasing complexity and changes of the government departments and bureaux made it a necessity to create a special notation scheme as an aid to arrangement. Low pointed out that "while we had certain reservations concerning the complexity of the Documents Office Classification, the use by it of unusual and possibly confusing symbols and the often chronological rather than alphabetical arrangement of bureaux within a department, the problem was basically one of finding a notation to include the entire collection of publications of federal, state,municipal and foreign governments, and of international agencies".(31)

The notation scheme developed at Oklahoma is displayed on the publications themselves and in the Document Division catalogue, where Library of Congress rules for entry are used.(32)

V Summary

The problem of handling government publications in a university library is one of choosing between the two traditional schemes of organization, of combining the two, or of developing a new scheme to meet the needs of the individual situation in a particular university. In favour of an integrated collection would seem to be the desirability of displaying all parts of the library collection in one bibliographic tool - the card catalogue. If quantity of publication makes consistent cataloguing of individual items impossible, links to existent indexes of catalogues for analytic cataloguing is considered by some to be an acceptable compromise.

The majority of libraries have elected to place government publications in separate collections using the notation schemes and indexes supplied by various jurisdictional agencies as the key to their collections, arranging the unindexed and unclassified material alphabetically by issuing body, and depending on trained staff to retrieve information - and documents - from the collection.

In some separate collections links to the general collection are provided through see also references in the main catalogue.

In general terms the problem has been one of choosing between a scattered arrangement with a unified organizational system as exemplified in the integrated collection, and a unified arrangement (in terms of country if not notation) with a diversified organization, as exists in the separate collection.

However, "a library is only as good as its ability to provide those seeking information with access to the material they need... New systems and techniques for communicating this information are proliferating, and they must be evaluated".[33] It should be possible to develop a new system for the organization of government publications within a university library which would conform with the desire of the user for a separate collection, as pointed out by Caldwell and others,[34] but which would, at the same time, provide a single or unified arrangement and organization for the collection.

Using the study of traditional concepts of university library organization of government publications as a means of identifying basic requirements for a new system, actual considerations of system design were next undertaken.

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23. Ibid.

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27. Clarke, "Cataloguing, classification and storage of government publications," p.62.

28. Campbell, A study of the extent to which existing printed government indexes and catalogues can replace the card catalogue," p.23.

29. Keefer, Mary "Simplified cataloguing of federal and state documents," Library resources and technical services, v.6 (1962), pp.262-264.

30. Low, "Government publications at Oklahoma A. & M.," p.18.

31. Ibid.

32. Ibid.

33. Holzbauer, Herbert "Bibliographic organization in the federal government," Wilson library bulletin, v.40 (April, 1966), p.731.

34. Caldwell, "University libraries and government publications." pp.30-33.

Chapter III: Design of a new system.

In designing a new system for the organization of government publications at the University of Guelph, two limits or design parameters were accepted from the beginning:

1. a separate collection;
2. a single or unified arrangement and organization for that collection.

The need for the first parameter, a separate collection, had become apparent from both the literature study and the situation at Guelph. The second limit seemed desirable, particularly in a Canadian library, where no single indexing scheme was available. This latter parameter became an objective which the system was to meet.

Before a system can be designed it is necessary to identify those factors in the environment which will influence the system. "The success of the design (of a system) is measured by the degree of integration with the environment."(1) Hall states that the "environment of a particular system includes all factors external to the system which affect it and which are affected by it."(2) Included in the environment are the "state of technology, other systems with which the system to be designed must coordinate, economic factors, and needs." (3) Although this study of the environment commenced in 1966, it is interesting to note that in spite of changes which have been made since that time, no decisions were taken which led to later difficulties or incompatabilities. The study was begun with an analysis of the state of technology as applied to information systems.

1. State of technology.

A study was made of various documentation systems, paying attention to those aspects of the systems which might be applicable to the design of a system for organization of government publications. Examples were sought of systems which were

basically simple, and which concentrated on retrieval of a document or publication through a variety of access points.

One of the simplest machine based catalogue systems was that developed by Phyllis Richmond at the University of Rochester to provide book catalogues for the Science libraries,[4,5,6] The catalogues were produced at that time using a one-line 80 column punched card input, containing an abbreviation of the author's name, short title, two digits of the date, and the Library of Congress classification number. Names of most personal authors were adequately covered by the 20 columns allowed, by corporate author names were abbreviated and not easily recognized in some instances.[7]

Example of Entry:

INT NICKEL CO.	NICKEL	44 TA0480.N
JACKSON, ALBERT S.	ANALOG COMPUTATION	60 QA0076.4

Example of Abbreviations:

SYM PHYS METALL STR	Symposium on Physical metallurgy of Stress Corrision Fracture[8]

The machine file at Rochester, produced as described, could be manipulated so that author, title, or subject (by classification) lists were produced.

Although a modification of this simplified approach to a machine system for government publications was considered for the Guelph system, several factors eliminated it as a possible choice:

(a) The preponderance of corporate entries in a government collection and the ensuing abbreviation problem would not provide a tool which either faculty or students could understand with a minimum of difficulty.

(b) Truncating the title would lead to confusion in many instances, since many government publication titles repeat the first phrase, and only distinguish between reports in a sub-title.

(c) The characteristics of government publications themselves reveal that data elements in addition to author, title, and date should be identified in order to provide bibliographic access through corporate bodies, series, and report numbers which may be associated with a publication.

Investigations were next made of systems which used fixed fields for some data, but which also used several cards for the bibliographic data, identifying different elements within the record by coding devices. Such a system can be exemplified by that designed at the Lockheed-Georgia Company.(9)

In this system, all data identified as essential for provision of access to each item was punched into a deck of cards, with a function code identifying various parts of the needed record. From this basic set of input cards, the Scientific and Technical Information Department at Lockheed-Georgia produced a shelf-list, report control number lists, personal author index, corporate author index, KWIC index for titles, in addition to internal management reports.

In each list or index only that information used as the key (e.g. author) plus additional information needed for locational purposes (e.g. report number) was displayed.

Various features of this system appeared to provide a possible solution to the government publication organizational problem, in that provision could be made for both corporate and personal author, title, date, report number, or any other element within the document record which was identified as an element which required display. Subject retrieval would be feasible through the KWIC method of title manipulation.(10)

A study of the state of technology, therefore, originally led to consideration of a punched card, fixed, and variable field format.

2. Other systems with which the system must coordinate.

Although one objective of the system to be designed was a separate collection for government publications, it was important that consideration be given to as much compatability as possible with the organizational system for the general collection. This would include, at Guelph, the Library of Congress Classification scheme and the Library of Congress adaptation of the Anglo-American Cataloguing Rules for entry and description. If a subject approach were to be provided by assigning descriptors or subject headings, this would have to be done through the Library of Congress list of subject headings if compatability were to be achieved in this area as well.

Recognizing this need for compatability and achieving it were obviously two different things. Economic factors which are discussed below took precedence over compatability in the final system design, and such features were added only when their cost did not influence the system adversely.

3. Economic factors.

Cataloguing standards accepted at the University of Guelph Library indicated that one professional cataloguer should complete 15 titles of original cataloguing a day. In addition, three clerical staff acted as support, in terms of card production, book processing, etc. for each cataloguer. Since Guelph received, in 1966, an average of 250 government publications a week, applying normal cataloguing and processing standards to these publications assumed a staff of 3 cataloguers and 9 clerks. It was considered economically impossible to assign a staff of that size to the processing of government publications. Some method which would make use of non-professional staff with a high productivity rate was therefore an environmental factor which had to be considered in the design of the system.

Mechanization appeared to provide the answer to this factor, since coding and key-punching, as single input operations, could be handled by non-professional personnel. In addition, the productivity rate, based on experience at centres such as Lockeed-Georgia, would be very high.(11)

This high productivity rate was made possible only because there was no adherence to cataloguing standards or rules for entry. No decision was needed as to which was the main entry, as opposed to any other type of entry. Each element of a publication need be entered only once, and with tags and codes assigned the mechanized system would produce the various indexes necessary for access to the collections. Moreover, as discussed in more detail in Chapter IV, the document code, which was the key to the file, was considered as a shelf location device only, not a classification approach.

4. Needs.

Environmental needs were identified as those which faculty members and other library users stated as being desirable in a separate collection of government publications:

(a) Capability of browsing;

(b) Geographical base to the physical arrangement;

(c) A single indexing scheme for the separate collection linked to the physical arrangement on the shelves, with the capability of distribution of indexes to several service points within the Library, and in department reading rooms;

(d) Retrieval of a publication through more than a general serial title or corporate body.

This last need led to a study of the data elements of government publications and/or technical reports. A recent report of the American Standards Institute, Sub-Committee on Machine Input Records,(12) identified data elements of all bibliographic records.

"Name (titlé of work)
Name of persons associated with the work
Names of corporate bodies associated with the work
Names of places associated with the work
Names of things associated with the work
Other related works
Dates associated with the work
Numbers of codes associated with the work
Serial characteristics
Form of the work
Physical features
Bibliographic contents
Subject content
Type of work reported
Level of work
Evaluation of work
Purchasing information" (VIII-I)[13]

The authors of the report break down each of the above data elements into smaller parts. For example, the title can be identified by 17 sub-elements.[14]

The data elements required for technical reports are discussed as being distinct from monographs, and a comparison is made between elements listed by the Committee on Scientific and Technical Information(COSATI) and by the American Standards Institute:

COSATI Element	A.S.I. Equivalent
Accession number	Call (location) number or series number
Corporate author	Main entry, added entry or publisher and place published
Title	Title statement or title added entry
Descriptive note	Sub-title
Personal author	Main entry, added entry, or author statement
Date	Date in the imprint statement
Pagination	Number of pages in the collection
Contract number	Note
Report number	Call (location) number or series number

Availability	Notes	
Supplementary note	Notes	
Security classification	Notes	(VI-II) (15)

Since the proposed Guelph system was to include both government publications and technical reports, data elements to be displayed in the bibliographic records, either explicitly or implicitly, had to make provision for identification of both the COSATI elements and those elements established by the American Standards Institute.

The following data elements were therefore selected as requiring specific descriptions in the proposed system:

Corporate author or bodies associated with the work;
Personal authors associated with a work;
Title:
Date of publication;
Report numbers or contract or series numbers related to a work;
Serial characteristics;
Form or work;
Physical features;
Type of work;
Bibliographic information;
Subject analysis.

With the environment analysis completed, specific objectives of the proposed system could now be defined.

1. As much information as possible should be recorded at the source from the document in hand, without dependence on other tools (i.e., A.A. cataloguing code, etc.).

2. The document should be on the shelves within a short time after its initial handling.

3. All data elements needed for access points should be identified, and should be explicitly defined. A distinction should be made between those needing quick access from a sorting viewpoint, and those which do not require such access (i.e. fixed and variable fields).

4. A notation scheme with a country base is required to arrange the publications on the shelves so that browsing

would be possible. Obviously this notation scheme would have to be alphabetic to a large extent.

5. This notation scheme should also provide the link to the indexes.

6. Computer produced book indexes or catalogues which could be updated on a regular basis, should provide access to the collection. These indexes should include personal author, corporate author, title, serial and series title, and number, and some form of subject retrieval. They should be produced in sufficient copies to permit distribution to various library service points on the campus.

A summation of the design parameters, environmental factors, and objectives of the Guelph system could be briefly stated as follows: the system must be simple, it must be cheap, it must meet the needs of its users, and it must take advantage of computer capabilities. In order to make such a system workable the next task was to design the file format and codes which would translate the design into the required results.

Footnotes: Chapter III.

1. Hall, Arthur D. A methodology for systems engineering (New York: Van Nostrand, 1966), p.62.

2. Ibid., p.5.

3. Ibid.

4. Richmond, Phyllis A. "A short-title catalogue made with IBM tabulating equipment," Library resources and technical services, v.7 (Winter, 1963), pp.81-90.

5. Richmond, Phyllis A. "Book catalogues as supplements to card catalogues," Library resources and technical services, v.8 (Fall, 1964), pp.359-65.

6. Richmond, Phyllis A. "Notes on updating and searching computerized catalogues," Library resources and technical services, v.10 (Spring, 1968), pp.155-60.

7. Richmond, "Book catalogues," p. 360.

8. Richmond, "Short-title catalogue," p.88.

9. Bauer, Charles K. "Practical application of automation in a scientific information centre - a case study," Readings in information retrieval, ed. by Harold S. Sharp (New York: Scarecrow Press, 1964), pp.569-611.

10. Bourne, Charles P. Methods of information handling (New York: Wiley, 1963), pp.16-20.

11. Bauer, "Practical application of automation," pp.569-611.

12. Curran, Ann T. and Henriette D. Avram, The identification of data elements in bibliographic records, Final report of the Subcommittee on Machine Input Records of the United States of America Standards Institute (May, 1967).

13. Ibid., p.VIII-I.

14. Ibid., p.I-4.

15. Ibid., p.VI-2.

Chapter IV: Development of codes.

1. Document Code Number.

The most important code to be developed was the document code, a number which would be unique to each publication. The starting point in the design of this code was provided by a code developed by Hans Peter Luhn, referred to as the Luhn code.(1)

1. Luhn code.

This is an eleven digit code which can be used to describe any document, but which lends itself particularly to monographs with personal authors.

Example: Author: Brown, James Peter
Title: Introduction to basic mechanics
Date: 1967

Luhn code for above entry: BROWJP67IBM

The code is made up of the first four characters of an author's name, his initials up to two, the last two digits of the date of publication, and the initial character of the first three key words in the title.

Although there are many features about the Luhn code which are attractive, notably its simplicity and ease of application, an attempt to use it to handle a multiplicity of corporate government entries showed its weaknesses. Although two characters could be used to describe the countries uniquely, the remaining two were not sufficient to provide for all the subdivisions and distinctions which occur within a jurisdiction.

A study of the notation scheme used at Oklahoma State University Library also proved useful.

2. Oklahoma State University notation.

(a) Main classes

A Colonial and revolutionary period of United States

B-F Federal United States government
- B Congress
- C Judiciary
- D President
- E Executive departments
- F Independent establishments

J Confederacy

M States, territories, etc., of U.S.

N Interstate agencies

P Foreign governments

T International agencies

(b) First subdivision

One letter or two, following the main classification may be arbitrarily assigned to place an agency in the desired relative position.

(c) Second subdivision

Arabic numbers are assigned to agencies which are subdivisions of the initial department of the main class.

Example: FF65 Federal Farm Board
FF97 Federal Loan Agency

(d) Third and Fourth subdivision

These two subdivisions are used when it is necessary to represent an agency subordinate to the second subdivision. The symbol is composed of the first two letters of the filing word of the agency plus a number if necessary.

Example: EC058/CA Civil Aeronautics Administration
EC058/CB Civil Aeronautics Board

(e) Book Numbers

The book number is assigned from the title of the publication. It is composed of the first letter of the first word of the title (excepting articles) plus the appropriate number from the Cutter-Sanborn tables.

(f) Dates

Dates are used to distinguish editions.

3. Guelph document code (original version).*

The notation scheme developed for the Guelph system can be seen as a combination of features from the Luhn and Oklahoma codes.

Example:

1 2	3	4 5	6 7	8 9	10 11	12 13 14	15
Country	Part	State or Province	Major Organization	Sub Division	Year of Publication	Title	Extra

(i) Country code

The first two digits, (alphabetic), are the country code. (See Table 1 for complete list.)

Example:		
	Canada	CA
	United States	US
	United Kingdom	UK
	USSR	UD
	India	ID

(ii) Part code

The third digit, (numeric), is used to distinguish among the various hierarchies of government within a country, to prevent arrangement of publications of a province or town, for example, with no distinction between them.

Code:
1 Federal government
2 Provincial or State
3 Country
4 City or town
5 National Institutions
6 Societies and Associations
7 Firms or companies

* for revised version see Chapter V.

(iii) Province or state code

This code is a two character alpha code, which arranges the documents in order under Part 2 of the country code. This keeps the publications of states or provinces together. (For complete listing see Tables VII,VIII)

Example:	Ontario	ON
	New Brunswick	NB
	Connecticut	CO
	Vermont	VE

(iv) Major organization

This is a two character, (alphabetic) assignment, very similar to the first subdivision of the Oklahoma notation, to keep agencies in a desired order.

Example:	CA1	DA	Canada. Dept. of Agriculture
	US1	DC	U.S. Dept. of Commerce

(v) Subdivision

Again, the similarity to the Oklahoma scheme can be noted, with a two digit arabic number assigned to subdivisions of the major subdivision.

Example:	CA1 DA31	Canada. Dept. of Agriculture. Research Branch
	US1 DC14	U.S. Dept. of Commerce. Civil Administration

(vi) Year of publication

The last two digits of the date are used, as in the Luhn code. For documents published during the nineteenth century the year of publication is represented by an alphabetic character in the first date space, and a numeral in the second. (for complete listing see Table IX)

Example:	1802	Q2	1702	G2
	1814	R4		
	1826	S6		

(vii) Title

Experimentation with titles of government publications revealed that the Luhn code method of using the alphabetic representation of the first letter of the first three key words of the title would lead to conflicting document numbers. The Oklahoma scheme for titles was therefore followed, except that two numeric digits rather than the full three Cutter-Sanborn digits are used. An extra 2 digits are available to allow for revisions.

Examples:

A31 Airport Bird Detection Radar for Reducing Bird Hazards to Aircraft.

(viii) Series code

Instead of subdivision numbers, series numbers are used.

Examples:

US1 SI39 Smithsonian Studies in History and Technology

CA1 MS9 Canada Geographical Branch Memoir

The year of publication is used as before.

Instead of title cutter numbers, a preassigned letter and the final two digits of the series number are used. eg. bulletin 679-B79.

The document code described above meets the second design parameter discussed in Chapter III. It is a single notation scheme for the entire collection, providing a unified organization for that collection. Additional features, meeting environmental needs also identified in the system design stage are provided:

(a) geographical base to the arrangement;

(b) browsing capability, produced by the geographical arrangement, and logical, or alphabetic subdivisions within each jurisdiction;

(c) link to indexes to the collection: (explained in detail in Chapter V);

(d) ease (and economics) of applications.

In addition to meeting design requirements, the Guelph document code provides a simple physical retrieval device through its mnemonic features. Moreover, it breaks logically into its various parts so that its total length does not inhibit its application or use.

II Other codes

In order to provide quick access to certain parts of the machine record for a document, or to provide information such as source which is not implicit in the document itself, other codes were designed to allow these features to be associated with each title. (Complete codes are shown in Tables XI,XII)

1. Type of material code

This is a one character code which distinguishes between monographs, serials, bulletins, annual reports, etc.

Example:

A Bulletin
M Monograph

2. Location code

This is a one character code which allows identification of location of a document if placed in department or divisional libraries.

Example:

T Horticulture

3. Source code

Although not necessary for the organization of the collection, information about the source of a document in the library system was considered important. Special listings of

of listings of material received by deposit, exchange or check-list, for example, could be useful for a variety of purposes.

Example:

2 Mailing List

4. Language code

The language of a document is usually implicit in the title, but by providing an additional code provision is made for documents in two or more languages, without the necessity of specifically indicating this information in a note.

Example:

3 English & French
2 French
1 English

5. Subject print-out

Although the main subject access in the system is through the permuted title index, it was considered useful to provide a method for linking subject based listings from the monograph or serials collection to the document collection. The serials and monographs in the University of Guelph Library are organized through automated systems, the key to each file being the Library of Congress classification number. Selective print-outs or bibliographies are provided for users, based on profiles which relate verbal subject headings to classifications. By assigning a broad (first two digits only) classification to each document title, it is possible to add documents to the bibliographies, if requested.

It should be emphasized that this is a feature of the system which was designed for the particular situation at Guelph, where selective print-outs from machine readable files are possible. The subject access to the document system is provided primarily by permuted KWOC indexes, on COM files (see below).

Example: QA Mathematics
SF Agriculture

6. Physical description code

Government publications and research reports are issued in a wide variety of formats and sizes. Rather than using space in the main recording of the bibliographic information for each title, a code was devised which would provide an adequate description of monographic items. For serial titles the same space is used for a frequency code.

Example:

LF Leaflet
MM Microfilm

7. Frequency code (Serials only)

Frequency information for serial publications was included since it was hoped that a future sophistication of the proposed system might simplify the check-in and receipt part of the government publications operation.

Example:

MN Monthly

8. Function code

This code is a method of identifying the various parts or elements of the data contained in the bibliographic record. In a traditional catalogue card format the function of a particular part of the record can often be recognized by the positioning of the information on the card. In a machine record this is, of course, impossible.

It should be emphasized that the identification of the function of an element of the data eliminates the concept of

entry or main entry. Any part of the record which has been uniquely identified can be used as the initial display device or access point. This can be explained using an example:

A publication entitled Glimpses of our national parks by Robert Sterling Yard will appear in the following way in three different indexes. Note that the first access point in each index is different for the same publication.

Personal author index: Yard, Robert Sterling Glimpses of our national parks. US1 IN25-41G65

Corporate author index: U.S. National Park Service Glimpses of our national parks. US1 IN25-41G65

Title index: Glimpses of our national parks. US1 IN25-41G65

Function Code Examples:

Corporate Author
11 Official Government

Title
22 Main Title

Personal Author
31 First Author

Holding Record for Serials
41 Holding Record

Added Corporate Author
51 Official Government

Series Code
61 Main Series

III Summary.

As discussed in the Foreword, it should again be emphasized that the design of the codes described was a deliberate departure from classification theory and cataloguing standards. The document code is viewed as a shelf location device and is structured only as is necessary to bring publications within each jurisdiction into an intelligent relationship. The other codes which were designed provide quick sorting capabilities through a data processing system and in no way necessitate involvement in rules, regulations, or principles of cataloguing. By transcribing the title page of a publication as it appears and assigning codes to make explicit the function of each data element contained, it is possible to meet the original requirements of the system: to provide a quick and economical method of in depth access to individual publications within the government collection. If classification and cataloguing systems had been desired the already accepted and eminently useful ones in use throughout the country would have been followed.

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Chapter V: Application of system

1. Early system description

With the original design completed and codes and programs developed, the system was tested on a sample of documents from the Guelph collection in 1966. By January, 1967, it was felt that testing was sufficient to begin operation.

Input was originally done from coding sheets, using IBM 029 keypunch machines, and an IBM 059 verifier. Although the keyboard characters were limited, this did not adversely affect either input or output.

Programs were written in COBOL and the computer was an IBM System 360, Model 30, with 32K storage. The system in terms of file organization and maintenance was comparatively simple.

Outputs consisted of six monthly catalogues:

i. personal author
ii. corporate author
iii. serial (Part I and II)
iv. series
v. title
vi. shelf list (internal)

Pages from early catalogues follow:

FIELDS, DONALD B.	GIFT TAX. (STUDIES OF THE ROYAL COMMISSION ON TAXATION, NO.13)	CA1 NR 66S13 -BK-D
FIELDS, DONALD B.	STUDIES OF THE ROYAL COMMISSION ON TAXATION. NO. 13- GIFT TAX.	CA1 NR 66S13 -BK-D
FIELDS, M.L.	EFFECT OF OIDIUM LACTIS ON THERMAL ACTIVATION AND RECOVERY OF BACILLUS C-OAGULANS SPORES.	US2MSU 1262E26 -LE-D
FIELDS, M.L.	EFFECTS OF HEATING MENSTRUA, SPORE AGE, AND SUSPENSION PREPARATION ON THE HEAT ACTIVATION OF BACILLUS COAGULANS SPORES.	US2MSU 1262E25 -PE-D
FIELDS, M.L.	EMPLOYMENT OF MOTHERS AND ITS EFFECT IN PROBLEM AND PROBLEM-SOLVING FAMILIES IN NORTHERN UTAH 1960-1961.	US2UTU 1266E56 -PE-D
FIELDS, M.L.	STUDIES ON HEAT RESPONSES OF BACTERIAL SPORES CAUSING FLAT SOUR SPOILAGE IN CANNED FOODS. 3- EFFECT OF STORAGE TIME ON ACTIVATION AND THERMAL DESTRUCTION RESPONSES.	US2MSU 1262E27 -PE-D
FIELDS, M.L.	STUDIES ON THE HEAT RESPONSES OF BACTERIAL SPORES CAUSING FLAT SOUR SPOILAGE IN CANNED FOODS. 1- EFFECTS OF HEATING MENSTRUA, SPORE AGE, AND SUSPENSION PREPARATION ON THE HEAT ACTIVATION OF BACILLUS COAGULANS SPORES.	US2MSU 1262E25 -PF-D
FIELDS, M.L.	STUDIES ON THE HEAT RESPONSES OF BACTERIAL SPORES CAUSING FLAT SOUR SPOILAGE IN CANNED FOODS. 2- EFFECT OF OIDIUM LACTIS ON THERMAL ACTIVATION AND RECOVERY OF BACILLUS COAGULANS SPORES.	US2MSU 1262E24 -LE-D
FIELDS, MARION I.	SUGAR-ACID RATIO OF SELECTED TOMATO VARIETIES.	US2MSU 1264S76 -PF-D
FIFIELD, C.C.	EVALUATION OF FORK INERT DUSTS ON WHEAT AS PROTECTANTS AGAINST INSECTS IN SMALL BINS.	US1 DA1767E921-PE-D
FIFIELD, W.M.	GLOVED TOMATO.	US2FLU 1235G67 -FD-D
FIGGINS, J.D.	NEW METHODS OF PREPARING FISHES FOR MUSEUM EXHIBIT.	US1 IN3310M24 -LF-D
FIKUIAS, L.I.	DISTORTION OF A SHOCK WAVE TRAVERSED BY A VORTEX.	CA2ONUT867038 -PE-D
FINCHER, LILLIAN J.	FOOD AND YOUR WEIGHT. (REV.3D.)	US1 DA1864F66 -PF-D
FINCHER, LILLIAN J.	FOOD AND YOUR WEIGHT. (REV.1967)	US1 DA1867F51 -PF-D
FINDLAY, D.C.	DOWN-HOLE GEOPHYSICAL STUDIES ON THE MUSKOX INTRUSION, COPPERMINE RIVER AREA, DISTRICT OF MACKENZIE.	CA1 MT3767D69 -BL-D
FINDLAY, D.C.	MINERAL INDUSTRY OF YUKON TERRITORY AND SOUTHWESTERN DISTRICT OF MACKENZIE, 1966.	CA1 MT3767M33 -BK-D
FINDLAY, D.C. (ED.)	DRILLING FOR SCIENTIFIC PURPUSES- REPORT OF INTERNATIONAL UPPER MANTLE SYMPOSIUM, 1965.	CA1 MT3766D63 -SR-D
FINDLEN, H.	VINE KILLING IN RELATION TO MATURITY OF RED RIVER VALLEY POTATOES.	US1 DA3664V34 -BL-D
FINE, I.V.	COMMERCIAL ENTERPRISES PROVIDING TOURIST AND TRAVEL OVERNIGHT ACCOMODATIONS IN WISCONSIN. (WISCONSIN DEVELOPMENT SERIES)	US2WIRD 66C65 -PF-L
FINE, I.V.	PRIVATE SEASONAL HOUSING IN WISCONSIN. (WISCONSIN DEVELOPMENT SERIES)	US2WIRD 66P75 -PF-L
FINE, I.V.	WISCONSIN AND THE VACATIONER. (WISCONSIN DEVELOPMENT SERIES)	US2WIRD 66W57 -BL-L
FINE, I.V.	WISCONSIN DEVELOPMENT SERIES- COMMERCIAL ENTERPRISES PROVIDING TOURIST AND TRAVEL OVERNIGHT ACCOMODATIONS.	US2WIRD 66C65 -PF-L
FINE, I.V.	WISCONSIN DEVELOPMENT SERIES- PRIVATE SEASONAL HOUSING IN WISCONSIN.	US2WIRD 66P75 -PF-L
FINE, I.V.	WISCONSIN DEVELOPMENT SERIES- WISCONSIN AND THE VACATIONER.	US2WIRD 66W57 -BL-L
FINE, JEROME M.	ATTITUDE CONTROL SYSTEM TO CONSTRAIN THE SKIN TEMPERATURE OF A MANNED LIFTING SPACECRAFT DURING REENTRY INTO THE EARTH'S ATMOSPHERE.	CA2ONUT867ABR -BL-D
FINLAY, A.	STUDIES ON HEAT RESPONSES OF BACTERIAL SPORES CAUSING FLAT SOUR SPOILAGE IN CANNED FOODS. 3- EFFECT OF STORAGE TIME ON ACTIVATION AND THERMAL DESTRUCTION RESPONSES.	US2MSU 1262E27 -PE-D
FINLEY, GEORGE M.	FRUIT GROWING FOR LOCAL DEMANDS AND FAMILY NEEDS.	US2GEU 1555F63 -PF-D
FINLEY, GEORGE M.	GROWING PECANS IN GEORGIA. (REV.1951)	US2GEU 1551G66 -PF-D
FISCH, GERALD G.	MODERN MANAGEMENT - A PAPER FOR THE CONFERENCE 'PRODUCTIVITY THROUGH NEW TECHNOLOGY', TORONTO, 1965.	CA1 EC416SM55 -PF-D
FISCHBACH, PAUL E.	SOYBEAN IRRIGATION IN NEBRASKA.	US2NAU 1367S53 -LF-D
FISCHER, W.K.	SNOW MOLDS OF WINTER WHEAT IN WASHINGTON.	US2WAU 1266S55 -BU-D
FISH, CHARLES J.	PRODUCTION AND DISTRIBUTION OF COD EGGS IN MASSACHUSETTS BAY IN 1924 AND 1925.	US1 IN3328P62 -PH-D
FISH, CHARLES J.	SEASONAL DISTRIBUTION OF THE PLANKTON OF THE WOODS HOLE REGION.	US1 IN3325S22 -BK-D
FISH, MARIE POLAND	CONTRIBUTIONS TO THE EARLY LIFE HISTORIES OF SIXTY-TWO SPECIES OF FISHES FROM LAKE ERIE AND ITS TRIBUTARY WATERS.	US1 IN3332C52 -BL-D
FISHER, D.F.	HANDLING APPLES FROM TREE TO TABLE. (REV.1951)	US1 DA1451H36 -PF-D
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230	SCHOOL BELLS OR WEDDING BELLS.	US2SCCU1666S18 -PF-D
231	SERVE CHICKEN ANYTIME.	US2SCCU1666S11 -FS-D

2

CLEMSON UNIVERSITY EXTENSION SERVICE INF. CARD.

72(REV.66)	SUMMER SPRAY SCHEDULE FOR PEACHES. (REV.ED.)	US2SCCU1667S96 -FS-D
87	TOBACCO INSECT CONTROL RECOMMENDATIONS FOR 1967.	US2SCCU1667T83 -PF-D
85(REV.67)	FOREST TREE PLANTING GUIDE, SOUTH CAROLINA. (REV.1967)	US2SCCU1667F57 -LS-D
91	1966 FALL PLANNING GUIDE FOR SOUTH CAROLINA FIELD CROPS.	US2SCCU1666F14 -FS-D
91(REV.67)	1967 FALL PLANTING GUIDE FOR SOUTH CAROLINA FIELD CROPS. (REV.1967)	US2SCCU1667F1A -FS-D
93(REV.67)	GETTING OPEN LAND READY FOR PLANTING PINES. (REV.1967)	US2SCCU1667G25 -LS-D
94	CONTROL OF HOUSEFLIES IN FARM BUILDINGS.	US2SCCU1666M57 -FS-D
97(SUPPL.)	COTTON INSECT CONTROL- SOUTH CAROLINA RECOMMENDATIONS 1967.	US2SCCU1667C682-FS-D
103	INSECTICIDE USE CHART FOR MILK PRODUCERS.	US2SCCU1666I58 -FS-D
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108	INSECTICIDE USE CHART FOR EGG AND POULTRY PRODUCERS. (REV.ED.)	US2SCCU1666I57 -FS-D
110	CONTROL OF APPLE INSECTS AND DISEASES - 1967.	US2SCCU1666A32 -FS-D
110(SUPPLEMENT A)	SPRAY PROGRAM FOR NONBEARING APPLE TREES.	US2SCCU1666S67 -FS-D
113	PLAN TO MAKE HIGH CORN YIELDS.	US2SCCU1667P53 -FS-D

15

CLEMSON UNIVERSITY EXTENSION SERVICE LAWNGRASS CIRCULAR SUPPLEMENT.

2	CONTROLLING TURFGRASS DISEASES.	US2SCCU1666C93 -FS-D

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7(REV.67)	COSTS AND RETURNS OF GROWING HOGS IN SOUTH CAROLINA. (REV.1967)	US2SCCU1667C56 -FS-D

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7	BACKYARD CAGE-LAYER SHED CAN BE A PROFITABLE FAMILY PROJECT.	US2SCCU1666B11 -FS-D

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1	SWINE BRUCELLOSIS.	US2SCCU1666S95 -LF-D

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2. Present sytem description.

The Guelph document system, having progressed through the design, test, and development phases has been operating since 1967. Most of the original design features and specifications still obtain and no substantial changes have been made to any of the programs or procedures. In fact, most alterations which have been made were introduced to take advantage of more sophisticated equipment, resulting in more efficient processing and in improved service to the user.

Input has advanced from keypunching, through keyboarding directly to tape (Mohawk Data Recorders), to the present method of optical character recognition using a Selectric typewriter with an OCR ball.

The University of Guelph Institute of Computer Science now has an IBM Model 155, with one 2314 disk and 8 tape drives. Printing is done on a 1403 high speed printer. Core size needed for the document system varies from 50 K for catalogue production (21 programs), to 130 K for updates (4 sort programs). C.P.U. time required by the system using the above computer configuration is as follows:

Supplements (1500-3,000 new records a month)	=	10-30 minutes per month
Cumulations	=	90 minutes per month
KWOC index (on COM file)	=	120 minutes per month

Records in the master document file are variable length up to 1600 characters. The select and print files contain fixed length records.

The University of Guelph Library Documentation Centre has a staff of 8, including one professional librarian. Six of these staff members re directly involved in coding and processing material (400 - 800 a week) - setting up organ-

ization charts, coding, revision of coding, OCR input, shelving processed documents - as well as assisting, to some extent, in public service. The supervisor of coding and input reports to the Department Head. The seventh staff member assists the Reference Librarian in acquisition and collection development. The Reference Librarian spends most of her time developing and improving the collection, and responding to user needs related to either the system design or to the collection.

Three minor changes have been made in the original system design. The first added a sub-routine to the programs to allow for expansion of certain organizations, and the second involved a shift in emphasis in the coding area. Examples follow to explain these changes:

(a) As experience was gained in blocking out number areas and assigning codes, it was found that insufficient space had been allowed for publications of the U.S. Department of Agriculture, (US1 DA). This problem was caused primarily by the decision to assign a unique organization number for each series, so that items in each series would stand together in ascending order on the shelf.

To re-organize and re-code this department's publications meant a changing of 600-900 code numbers. As the programs originally existed all affected records would have to be deleted and re-entered. Rather than re-coding, re-checking, and re-inputting records which were essentially correct, a sub-routine was added to the programs which takes data from a code number change form, deletes an old code and supplies a new one. The U.S. Department of Agriculture has now been assigned US1 D 00-99 to US1 DB00-99, allowing the flexibility of 300 number combinations, an increase from the 100 previously assigned.

(b) It was observed that sutdents and faculty most often cite the name of the series when asking for a report or technical paper, eg., Technical report 580 of the National Bureau of Standards. The series catalogue had always displayed the entries by series titles, but it was felt advantageous to emphasize this user response by having the shelf arrangement reflect the series as well. The Guelph document system was changed to code primarily by series whenever possible.

Each series within a department has a unique organization number sub-divided by year, one alphabetic character for series name, and the last two or three digits of a series number. The resulting document code allows the user to see exactly what the Library holds in any particular series, even to the item which has been received, coded, and shelved that day.

This shift in coding emphasis from individual title to series approach has increased the economy of the system. Because so much of each code number is common to all items in a series (only year and final two or three digits differ for each item), a routine termed 'block coding' has been developed. Information common to the series is entered on a master coding sheet: code number, acquisition source, location, bibliographic data, plus corporate author and series name. This coding sheet is duplicated so that sheets are available for all items to be coded in one series.

To enter or code a specific document within a series, the document code number is completed, subject and size codes are added, and variable field information - personal author, title, and series number - is entered. It is possible to teach a new assistant to 'block code' in less than an hour, and part-time student assistants can be used quite successfully in this task.

(c) A simple change in the printout format has also been made to assist the user. A dash has been inserted between the organization number and the data to avoid confusion in using the catalogues.

3. Daily routines.

The coding and processing system for documents is designed to operate so that once the organization, codes and numbers of a department are established, incoming mail can be opened and stamped, coded, processed, and shelved on a daily basis.

Information describing each monograph or document in a series is recorded on an individual coding sheet. This coding sheet is divided into a header record area and a descriptive record area, each having a function code and file maintenance designation (F/C, F/M).

The header record consists of 19 fields of fixed length and contains the code number as well as acquisition, location, and bibliographic information. The descriptive record area is made up of variable length fields containing data about the corporate author(s), title(s), personal author(s), series name and number, and serial holding record.

The completed coding sheet remains with its document until the coding is revised. It is at this point that the document is ready to be shelved.

The coding sheets are batched and given to the input assistant who types the information on to the optical scanner paper using an IBM Selectric typewriter fitted with an OCR ball. Any updates or correction to the master file are done in the same way. The scanner sheets are revised and any errors or omissions corrected at this time.

The input sheets are sent to the optical scanner on a regular basis. The magnetic tape generated contains all transactions, new input to the system, and changes and deletions to the Master File.

The procedure for processing changes of code number only is basically the same. Old and new code numbers are entered on the code number change forms which are then key-punched and merged with the master file tape after the scanner tapes are processed. When all the records have been added to the master file those specific portions of each record required for each catalogue are extracted from the master file and the set of catalogues produced. If no financial restrictions existed the Master File could be updated and catalogues produced every week.

Documents with a serial format need not be processed individually once the code number for the serial has been established. When a new issue of a serial arrives, the shelver pencils the code number plus volume, issue number and/or year on the document and it is shelved immediately. It should be mentioned that a co-operative arrangement with the Serials Department eliminates any duplication of a 'Kardex' type check-in. The Documentation Centre notifies the Serials Department of the code number for all serial documents recorded on Kardex. The Serials staff then supplies the code number notation on each new issue received through that department for routing to the Documentation Centre.

4. Files maintained.

There are two authority files maintained on cards: a Corporate Author File and a Series Name File which includes specific instructions for entry form.

The Corporate Author File is necessary because of the period of time between the coding of a publication from an organization and the listing of that record on the master file, normally about four weeks. If a file of this type is not maintained, there may be slight variations between individual coding in the exact form of entry of the issuing body. For example, DEPT. OR DEPARTMENT; U.S. DEPT. OF DEFENCE. ARMY DEPARTMENT, OR U.S. DEPT. OF THE ARMY, and so on. If this were an on-line operation this file would not be necessary.

The second authority file is for series name and method of entry. The need for a standard series name is obvious; otherwise the listings in the Series Catalogue might become inconsistent. A series is normally entered by using a set code number to the end of the organization sub-field in addition to the first character of the title field which is a letter assigned for that series: T for technical reports, R for research reports, etc. The individual items of the series are differentiated by the year of the publication and the last two or three digits of the series number. This information is recorded on the series authority card.

For example, Paper number 64-50 in the Geological Survey of Canada series would have a document number CA1 MS32-64P50, where 32 is the subdivision number for this series, and P for Paper, 64 is the year of publication, and 50 the last two digits of the series. If more than 99 Papers were published in one year three digits of the series number must be used and this instruction is so recorded.

The few series whose numbering systems create exceptions such as the AD and PB series of the U.S. National Technical Information Service, or the U.S. Office of Education OE series have specific instructions for entry noted on their respective series authority card.

5. Organization.

The most difficult part of the Guelph document system is setting up the organization chart, or blocking out the numbers to be assigned for the published output of a government body. This task requires more judgement and experience than any other part of the coding operation. The theory is basically simple, but knowledge of government structure and custom is almost essential.

First, if at all possible, a chart of the organizational structure of the department is used. Many such charts are readily available - Organization of the Government of Canada, U.S. Government Organization Manual, etc. Next must be determined which of the departments, divisions, or branches publish and what sort of publications they issue - annual reports, bulletins, serials, series, etc. A decision must be made as to how detailed the chart should be; this depends on the published output of the department and how it appears to be organized. Once the pattern is established, serials, series, monographs, and a rough assignment of letters and blocks of numbers can be made.

Government reorganization can create problems in the organization charts. If sufficient spaces are left in the assignment of letters and numbers the task of changing is simplified. One fortunate coincidence in a recent departmental combination occurred in the Canadian government when the Department of Fisheries and the Department of Forestry were amalgamated. Because of the letters already assigned, FR and FS with space left in between, these two were in fact side by side on the shelves.

In general, the Guelph document system relies on the printed catalogues with cross references to display the publications - previous, present, and future - whenever a department changes name, or when divisions within a department are shifted from one area to another.

6. Output: Catalogues.

To meet the requirements of the university trimester system, the Guelph Documentation Centre issues at least six sets of catalogues each year: one cumulated set at the beginning of each trimester and one or two supplements each trimester, the second supplement cumulating the first. This means that at no time does the user need to look in more than two places. Five of the public catalogues are printed on a six-part carbon paper so that each subject division in the library has its own set. The printed catalogues are bound in colour coded covers: Corporate Author, orange; Personal Author, purple; Title, blue; Series, red; and Serial, yellow.

The KWOC, or Key-Word-out-of-Context Index for subject approach is printed directly on microfilm (COM File). A free vocabulary thesaurus of over 700,000 entries provides more than adequate access.

The public catalogue set consists of the five printed catalogues and the KWOC Index in COM cartridges. These provide the six points of access to the coded material. The browsing capability of the "Guelph document system" is an added feature. If a user needs a very recent report or paper in a series and this specific one is not yet listed in the catalogues, the arrangement of material on the shelves can be an additional access point. If the report has been received it will be in its appropriate place on the shelf in number order in the series.

In every catalogue, each entry displays first the access point, eg., personal author, or title, depending on which catalogue is bein consulted, the title of the document, and its code number plus feature code, which is a two character size indicator, and location code.

The Corporate Author Catalogue is arranged by country, subdivided by level of government. Within this subdivision the corporate bodies are listed alphabetically. Information indicating the area of level of government is printed at the bottom of each page. An alphabetic Corporate Author Log is bound separately and serves as an index to the Corporate Author Catalogue.

The Personal Author Catalogue is a basic author-title-code number listing, alphabetically arranged by the author's last name.

The Title Listing is alphabetically arranged by the first word of each title as it was coded into the system, with the appropriate code number affixed to each entry.

The Series Catalogue is arranged alphabetically by the series name, with the specific numbers in each series listed in ascending numerical order. The Series Log serves as an index to the names of the series. The country, part, province or state and organization number of each series name is also displayed.

The Serials Listing is a two-part catalogue. The first section displays the corporate author or issuing body alphabetically with its various serial publications; the second section is arranged alphabetically by the title of each serial.

The KWOC Index (COM File) displays each key word out of context with its corresponding document title and code number. A label on each microfilm cartridge indicates which letters are contained in the cartridge and where. (i.e., number of feet from the beginning each letter begins.) A reader/printer used with the KWOC Index makes it possible for the user to obtain a printed bibliography of documents in his subject area.

7. Cooperative use of the Guelph document system.

Although the Guelph document system was designed to meet organizational problems for the University of Guelph Library only, other libraries both in Canada and the United States have shown interest in the system and in several cases have implemented some version of it. Initially the University of Guelph Library staff made copies of their manual, their catalogues, or system documentation available at cost. Consulting services and assistance in actual implementation in a computer centre were provided on a fee for service rendered bssis. It became apparent that there would be advantages if the system were used cooperatively so that a union catalogue, rationalization of collections, and reduction of duplication of coding would result.

In June 1971 the libraries of the Universities of Guelph and Western Ontario entered into a cooperative agreement to use and develop the Guelph document system. Within a year a union catalogue of government publications held in both libraries was a reality, and agreement had been reached on such matters as:

(a) areas of collecting;
(b) countries for coding responsibility;
(c) exchange of original document codes.

The success of this cooperative approach and the enthusiasm of users at both institutions for the increased access to both their own and other collections of government publications led to the expansion of the two university system into a regional network. By early 1973, one federal government library and eight Ontario university libraries were in various stages of the process of implementation of the Guelph document system.

Representatives of each library participating in this expanded project meet to agree on the role of each library in the network. Libraries without computer facilities code their material locally and have it run (at cost) on the Guelph computer. Libraries with access to computer facilities receive copies of the programs on the understanding that no change (other than those required by local hardware requirements) can be made to the system design. Meetings of library system analysts responsible for operation of the document system in the participating libraries provide an opportunity for identification and solution of problems, and ensure compatible use and development of the system. Similar meetings of document librarians are resulting in the establishment of procedures for exchange of unique codes, assignment of country codes, areas of collecting, and further expansion of the union catalogue.

Chapter VI: Manual of procedures.

This is the manual used in the Documentation Centre, University of Guelph Library. Local coding practices such as tagging for various campus locations are included. Other users would insert their own local variations in these fields.

The terminology used in this manual is deliberately simplified since clerical staff, after only minimum of training, are expected to code. It seemed more practical, for instance, to use the terms letters and numbers more frequently than alpha and numeric characters or digits.

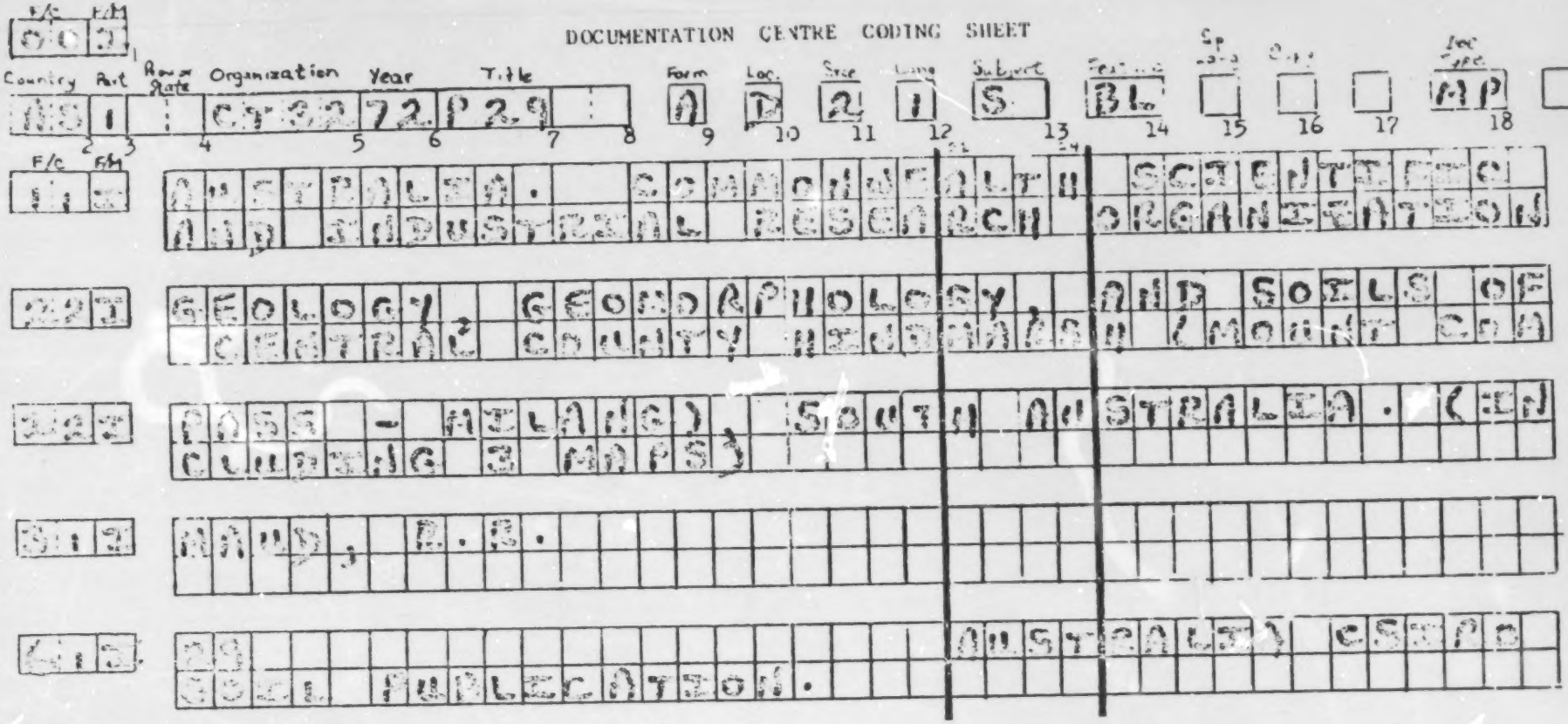
Illustrations of a coded document precede the actual manual.

Geology, Geomorphology, and Soils of Central County Hindmarsh (Mount Compass–Milang), South Australia

By R. R. Maud

Soil Publication No. 29

Commonwealth Scientific and Industrial
Research Organization, Australia
1972


DOCUMENTATION CENTRE CODING SHEET
F/C F/M
Country Aut Rec Status Organization Year Title Form Loc. Size Lang Subject Sp Cap Loc Type
AS 1 CT32 72 P29 A D 2 1 S BL MP
F/C F/M
AUSTRALIA. COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION
GEOLOGY, GEOMORPHOLOGY, AND SOILS OF CENTRAL COUNTY HINDMARSH (MOUNT COM
PASS - MILANG), SOUTH AUSTRALIA. (INCLUDING 3 MAPS)
MAUD, R.R.
AUSTRALIA CSIRO SOIL PUBLICATION.

DOI/AS/1//CT32/72/P29//A/D/2/1/S/BL////MP/%

11IAUSTRALIA. COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

22IGEOLOGY, GEOMORPHOLOGY, AND SOILS OF CENTRAL COUNTY HINDMARSH (MOUNT COM

22IPASS - MILANG), SOUTH AUSTRALIA. (INCLUDING 3 MAPS)

31IMAUD, R.R.

61I29↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓AUSTRALIA CSIRO SOIL PUBLICATION.

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Manual

There are three types of coding in the Guelph Document System:

Monograph
Serial
Series

MONOGRAPH: A monograph is a publication that is not part of a numbered set and will not appear again, except in the case of new editions or revisions. Monographs are handled by corporate author authority file and the title cutter number system is used to initiate the title part of the document code.

SERIAL: A serial is a publication issued at regular intervals under the same name. A serial is entered once, with a holding record. Serials are processed using monograph coding, with the organization letters and numbers coming from the corporate author authority file and the title code developed from the title cutter number system. The difference in the document code between a monograph and a serial is that a monograph shows the year of publication and a serial leaves the year out.

SERIES: a publication in series has a special type of coding. When coding a monograph or serial the objective is to keep all material by the same corporate author together. In a series the objective is to keep all items in the same series together and in series number order. Each series has its own organization number that is peculiar to that series; this keeps the series together with nothing else interfiled. The year of publication, a predetermined title letter, and the last two digits of the series number complete the code number. Exceptions to this basic rule are noted on the series cards of the series concerned.

A series organization number overrides a corporate author organization number, but the series numbers are based on the corporate author numbers, so that the shelf order for any given corporate author should be: Serials, Monographs, Series.

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Authority Files

The authority files are the master files for the Corporate Authors and the Series. They are both card files, and each entry has its own card.

Corporate Author Authority File: The CA authority file consists of a card for every corporate author in the system. The file is arranged by country, next by part within the country, then by department within the part,and finally, by division within the department. This is the same arrangement as in the Corporate Author Catalogue.

Series Authority File: The series authority file consists of a card for every series in the system. The cards are arranged in alphabetical order by series name. This is the same order as in the Series Catalogue.

The two authority files are completely separate. They are both used to standardize entries and to keep a record of the organization letters and numbers in use. All special instructions are found in the authority files.

The file maintenance code (F/M) consists of one letter. This letter indicates to the computer program what to do with the entry following.

"I" a new entry is being made to the master file. When "I" is used, it is put at the beginning of the header fixed field and at the beginning of every data variable field used.

"D" an entry is being deleted from the master file. The "D" is entered on the header fixed field and only the document number follows it.

"X" used in the header fixed field and "U" in the data variable field indicate a change is being made in at least one of the data fields of a record already on the master file. The header fixed field includes only the document code and those data fields being changed or added.

"X" in the header fixed field can be followed by both "U" and "Z" in the same entry.

"U" in the header fixed field indicates a change in an existing entry. The change will be in the header fixed field, but not in the document code, if necessary a change can be made to a data variable field at the same time.

Function Codes and File Maintenance Codes

Each line of the coding sheet is started by a function code and a file maintenance code. These two codes are instructions to the computer program.

The code identifies to the computer program the type of information contained in the field which follows.

00 header fixed field
11 corporate author
21 corporate author cross reference
22 main title
23 added title
25 notes to appear only in the shelf list
31 1st personal author
32 2nd personal author
33 3rd personal author
41 serial holding record
51 added corporate author
61 series
62 added series
63 series cross reference

Header Fixed Field

The Header is the first line of any entry; it consists of three parts:
the F/C and the F/M
document code number
description of the material

The F/C is always 00, the F/M can be "I", "X", or "U" or "D".

The Document Code consists of 6 parts:
Country
Part
Province or State
Organization
Year
Title

COUNTRY: The country code consists of two letters; they indicate the country where the material was published. See Table I.

PART: The part code consists of one number. It is always used, except when the country code is ZZ (international organization). It indicates the level of government (e.g., federal, state, local) that published the material. Tables II - VI give the general part code, and special part codes in use for the United Nations, Great Britain, Canada and the United States.

PROVINCE: The province code consists of two letters. The part code indicates whether or not the province code will be used. The following part codes call for the use of the province code:

2 province or state
3 counties
4 towns and cities

With the following part codes the province code is left blank:

1 federal
5 national institutions and universities
6 societies and associations
7 commercial firms
When the country code is ZZ the province code is blank.

The province codes for Canada and the United States are given in Tables VII and VIII.

ORGANIZATION: The organization code consists of four characters; two letters or one letter and a blank: two numbers; or a blank and a number; or two blanks. (Of the two numbers the first number cannot be zero, it must be blank; conversely the second number must not be blank, it must be a minimum of zero. This is because of computer sorting; blank and zero do no have the same value, and nothing files before something.) The letters indicate the department which published the material, (e.g., in Canada the organization letters DA indicate the Dept. of Agriculture). A department can have more than one set of organization letters, but they are usually consecutive, (e.g., the US Dept. of Agriculture has the organization letters DA, DB, DC). The two numbers indicate either a division within a department or a series put out by a department. If a document is from a department with no indication of division or series, the space for the two numbers is left blank. The organization letters and numbers are taken from the corporate author and series authority files.

YEAR: The year code consists of either two numbers or a letter followed by a number. Usually the code represents the year the material was published. In the twentieth century the last two digits of the year are used (e.g., 1968 is 68), and in the nineteenth century and earlier a special code is used. (See Table IX). In general the year is always filled in, except in the case of a serial.

TITLE: The title code consists of one letter followed by a minimum of two numbers. There is room for two additional characters which can be either letters or numbers or both. These two characters are referred to as Emergency characters. It is not necessary to use both the Emergency columns. If only one is used it is the first one, and the second one is left blank.

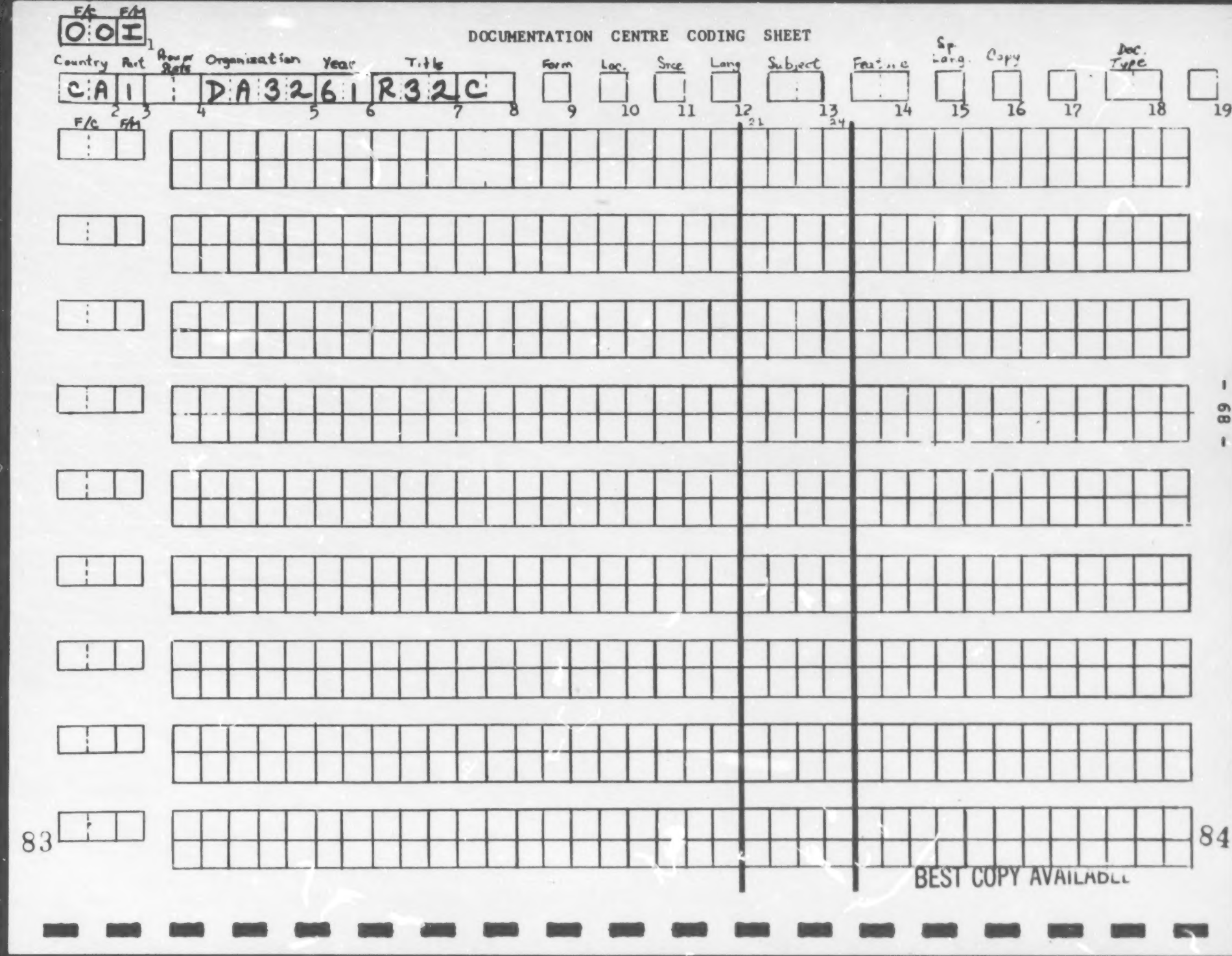
There are two types of title coding: series and title cutter number.

Series coding is used when a publication is part of a numbered set. All books in the series have the same title letter and the numbers are the last two numbers of the series number (e.g., Bulletin 592 is B92) Exceptions to the last two numbers rule are given in the series authority file.

Title cutter number coding is used when a publication is a monograph or a serial. The title letter is the first letter of the title (excluding "and", "the", "a"). The numbers come from a code assigning numeric values to letters. (See Table X) The letters used are the second letter of the first word, and the first letter of the next major word.

The Emergency columns are used to indicate data such as revisions, reading room book, French editions in Canada, and occasionally to keep large series in order.

FOR EXAMPLE SEE FOLLOWING PAGE


F/C F/M
0 0 I
1
DOCUMENTATION CENTRE CODING SHEET
Country
Part
Rev/Ed
Organization
Year
Title
Form
Loc.
Srce
Lang
Subject
Feature
Sp Lang.
Copy
Doc. Type
C A 1
D A 3 2 6 1 R 3 2 C
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
F/C F/M
21
24
83
84
- 89 -
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The rest of the header fixed field consists of description of the material.

There are 11 fields in the description:

Form
Location
Source
Language
Subject
Feature
blank
Copies
blank
Document Type
blank

All the descriptions are given in codes.

FORM: The form code describes the type of document being coded

"A" series, e.g., bulletin, research paper, technical report
"M" monograph
"S" serial
"Ø" serial that is in the nature of an annual report
"I" serial that is no longer published
"R" cross reference, either series or corporate author
"B" both series and serial

LOCATION: The location code consists of one letter, and it indicates the various locations of a book on campus, i.e., what reading rooms, O.V.C. Library, or the Documentation Centre. The location code is used in conjunction with the emergency digit column. When a book is located anywhere but the Documentation Centre the letter in the location column must also be placed at the end of the call number. This is because any books held in reading rooms must be held in the McLaughlin Library (except O.V.C. books), and if two identical document codes are entered the computer will reject the entries. Repeating the location number

at the end of the document codes will prevent duplication of these codes.. The only exception to this is for books coded by the Documentation Centre and held on other floors of the McLaughlin Library. The location code is "Y", but instead of putting "Y" on the end of the code number we use the floor number. The location codes are shown in Table XI.

SOURCE: The source code consists of one number, and it indicates how the Library acquired the material. The code is as follows:

1 daily checklist
2 mailing list
3 gift
4 exchange
5 subscription
6 membership
7 purchase
8 depository
9 special collection
0 University of Guelph publication

LANGUAGE: The language code is a one digit code indicating the language of the publication.

1 English
2 French
3 French/English
4 German
5 Italian
6 Chinese-Japanese
7 Russian
8 Spanish-Portuguese
9 Other polyglot
0 Other

The most important thing to remember about the first four description codes is that they must be filled in, and they must be filled by either letters or numbers according to the code for each one. If a blank, an alphabetic, or a numeric character appears where it should not be according to the code, the computer will reject the entry.

SUBJECT: The subject code refers to the LC subject heading. It is assigned from the current edition of Outline of the Library of Congress Classification.

FEATURE: The feature code consists of two letters. There are actually two sets of feature codes; one for monographs and series and one for serials. The one for monographs and series gives an approximation of the size of the book, and the one for serials gives the issuing frequency. See Table XII.

COPY: The copy code refers to the number of copies if more than 1; if the number of copies goes over 9, then 9 is shown in the copy code, as it is a one number code. If there is only one copy the copy code is left blank.

DOCUMENTATION TYPE: The Document Type is a rarely used code to indicate special types of material.

UN - undergraduate thesis
TH - Master's thesis
DS - Doctoral thesis
RH - regional history collection
AH - agricultural history collection
MP - map in map pocket

For example of the descriptive codes in the header fields see following page.

DOCUMENTATION CENTRE CODING SHEET

F/C F/M 1

Country	Art	Rev. of Arts	Organization	Year	Title	Form	Loc.	Srce	Lang	Subject	Feature	Sp. Lang.	Copy		Doc. Type	
2 3			4 5		6 7 8	A 9	D 10	2 11	1 12	S F 13	P F 14	15	2 16	17	U N 18	19

F/C F/M 21 24

88 89

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Data Variable Fields

The data variable fields contain:

Corporate Author

Added Corporate Author

Title

Added Title

Personal Author (to a maximum of 3)

Series

Added Series

Notes

Cross References

Each line of a data variable field begins with a F/C and a F/M.

CORPORATE AUTHOR: The F/C for the main corporate author is 11. The F/M code is either "I" or "U". (See page 63) An entry must have a corporate author so presumably the F/M code "Z" would never be used. The corporate author is the department which issued the material being coded. The corporate author is determined from the book, and the format for the corporate author is given in the authority file. The most common format for a corporate author is the name of the country followed by a period and a double space, the name of the department followed by a period and a double space, and the name of the division. There is no period at the end of a corporate author. In general the system only goes down three divisions.

e.g. Canada. Dept. of Agriculture, Research Branch
U.S. Public Health Service
Ontario. Dept. of Education. Curriculum Division
Guelph, Ont. Planning Board

The material is arranged by Corporate Author in the Corporate Author Catalogue. The CA catalogue is arranged by country, and by part within the country (with the exception of the UN). The material in each part is put in alphabetical order. Each CA is printed as a heading (these headings are in alphabetical order) and all the titles under each heading are printed out in alphabetical order. The CA log prints only the CA's in alphabetical order.

ADDED CORPORATE AUTHOR: The F/C for an added Corporate Author is 51. The F/M is either "I" or "U" or "Z" It is not necessary to always have an added corporate author. They are the same as a corporate author except that instead of beginning the coding immediately after the F/M code the first five spaces on the line are used to indicate the Country, Part, and Province

of the added CA. U.N. added corporate authors do not show part. This is so that the computer program will identify which section of the Corporate Author catalogue into which the added corporate author sorts, as it may not be the same as the section for the main corporate author. An added corporate author always begins on the 6th space of the line, excluding the spaces allotted for the F/C and the F/M.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/C	F/M	Country	Rpt	No. of Parts	Organization	Year	Title	Form	Loc.	Srce	Lang	Subject	Feature	Sp. Lang.	Copy		Doc. Type	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	1	H	NATIONAL RESEARCH COUNCIL OF CANADA																	
5	1	H	USI U.S. ENVIRONMENTAL PROTECTION AGENCY																	

21 24

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93 94

TITLE: The F/C for the title is 22. The F/M is either "I" or "U". Since an entry must have a title presumably "Z" would not be used. The title is written as it appears on the book with a period at the end. Care must be taken to ensure that the title is specific; for instance, if the document is an Annual Report, indicate the Annual Report of which body. Titles appear in all the catalogues. In the Title Catalogue they are arranged in alphabetical order by title. A title must not begin with "and", "the", or "a". Numbers at the beginning of a title must be written out, and dates at the beginning must be moved to another location in the title. (This is done because of computer sorting in which numbers file last.)

ADDED TITLE: The F/C for the added title is 23. The F/M code is either "I" or "U" or "Z". An entry does not have to have an added title. Added titles are the same as the main titles, except that they do not appear in the series (and corporate author) catalogue. Initially they were used to bring important words to the start of a title, but the KWOC index has eliminated most of the need for added titles.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/C F/M 1 | Country 2 | Part 3 | Prov. State 4 | Organization 5 | Year 6 | Title 7 8 | Form 9 | Loc. 10 | Srce 11 | Lang 12 | Subject 13 | Feature 14 | Sp. Lang. 15 | Copy 16 | 17 | Doc. Type 18 | 19

F/C	F/M	21	24
22	I	CHALLENGE OF ABUNDANCE.	
23	I	REPORT OF THE ONTARIO DEPT. OF AGRIC	
23	I	ULTURE AND FOOD ON FARM INCOME - CHA	
23	I	LLENGE OF ABUNDANCE.	

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PERSONAL AUTHOR: The program allows for a maximum of three personal authors. Each author receives his own field, and thus his own F/C: 1st author 31, 2nd author 32, 3rd author 33. The possible F/M codes are "I", "U", and "Z". An entry can have one, two, three or no personal authors. Authors are written last name first, followed by a comma, then given names or initials, whichever is given. Rank and degrees are not shown, only JR., ED., TR.

e.g. Brown, David James (Jr.)
Johnston, S.R.
Johnston, S. Ralph
White, Gertrude H. (Tr.)

Personal authors are listed alphabetically by author, with the title following in the personal author catalogue.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/C F/M 1

Country 2 | Rest 3 | Power State 4 | Organization 5 | Year 6 | Title 7 8 | Form 9 | Loc. 10 | Srce 11 | Lang 12 | Subject 13 | Feature 14 | Sp. Lang. 15 | Copy 16 | 17 | Doc. Type 18 | 19

F/C F/M

3 1 H BROWN, DAVID JAMES (JR.)

3 2 H JOHNSTON, S.R.

3 3 H WHITE, GERTRUDE H. (TR.)

21 24

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SERIES: The F/C for a series is 61. The F/M is either "I", "U", or "Z". An entry does not have to have a series field. The series number is written in the first 9 spaces of the line. It is not necessary to use all 9, and the sort is set up so it is not necessary to put in holding zeros ahead of the series number. The series number starts in the first space.

When the computer reads a number it does not consider the whole number at once, instead it sorts digit by digit. This means that if the computer was allowed to operate on series numbers of various lengths the count would be as follows:

1
13
132
14
19
25
253
27
999

To counteract this sorting problem it is necessary to have all the numbers the same length. There are two ways to achieve this. Predetermine the maximum length of the field and put zeros in front to the number. This results in a number which is awkward to read. So that the number will appear as it does on the book the computer program counts the number of spaces used by a number, puts the numbers in groups by number of spaces used, and then sorts the number. In this way the numbers come out in perfect order.

It is also necessary to know how computer sorting works when dealing with a revision. If an entry in a series is revised the document code remains exactly the same as it was for the original edition and a letter is added at the end. This is necessary to keep the series in series number order. At the end of the series number in the 61 field the word Rev. appears, followed by the last two digits of the year in brackets. e.g., 342(Rev.72). An instruction is made in the computer program with the number of digits to be counted. This instruction is placed in space 20 of the 61 field, and because only 1 space is used for the instruction the sort is limited to 9 characters.

A series number can include letters, numbers and dashes. There must not be any blanks within a series number, but it need not be 9 digits in length. It may be necessary to insert zeros to ensure the same length for volume and number.

The series name or heading is started in the 21st space on the line. A series heading contains no periods, except for abbreviation, until the end of the line. Series headings

are listed in the series authority file and series log. The Series Catalogue lists all the series headings alphabetically, and lists the titles in a series by series number order under each heading. The series log simply lists all the series alphabetically, plus the first 9 characters of the document code number.

ADDED SERIES: Are exactly the same as a main series except that the F/C is 62.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/C	F/M	1	Country	Rpt	Prov/State	Organization	Year	Title	Form	Loc.	Srce	Lang	Subject	Feature	Sp. Geog.	Copy		Doc. Type	
			2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
6	1	H	1 2 5											GEOLOGICAL SURVE						
			Y OF CANADA. BULLETIN.																	
6	2	H	1 9 (R E V . 7 2)											2 U . S . DEPT . OF TH						
			E INTERIOR PUBLICATION.																	

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NOTES: Notes have the F/C and the F/M "I" "U", or "Z". It is not necessary for every entry to have a note. A note appears only in the shelf list and can be in any format.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/C	F/M
00	H

Country | Part | Prov/State | Organization | Year | Title | Form | Loc. | Srce | Lang | Subject | Feature | Spare | Copy | | Doc Type | |
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

F/C	F/M	
25	H	WE KNOW THIS CALL # IS WRONG - CHANGED TO PREVENT DUPLICATION WITH # 4-1
25	H	000B.

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CROSS REFERENCES: Cross references are used to indicate name changes in either corporate authors or series.

A Series cross reference is handled as follows:

Header Fixed Field:

F/C 00

F/M I

Country blank

Part blank

Province blank

Organization last two numbers of the year followed by the number of the month, e.g., April 1972 7204

Year the day of the month

Title the time expressed in hours and minutes, e.g., two-thirty 1430

Form R

The rest of the field is blank. The R in the form code allows us to put numbers where there should be letters in the document code.

Data Variable Fields:

61INote in the 21 space enter the one name for the series

63ISee - (or else See Also -) starting in the 21 space put the alternate for the series

Series cross references must be made both ways in the case of a See Also, i.e., it takes two sheets to make a complete cross reference.

When a cross-reference is deleted or changed "R" must be entered in the form code.

FOR EXAMPLE SEE FOLLOWING PAGE.

DOCUMENTATION CENTRE CODING SHEET

F/C	F/N
0 0	H

Country	R.t	Rec'r Rels	Organization	Year	Title	Form	Loc.	Src	Lang	Subject	Feature	Sp. Lang.	Copy		Doc. Type	
			7204	21	1430	R										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

F/C	F/N		
61	H	NOTE AGRICULTURE PUBLICATION.	ONTARIO DEPT. OF
63	H	SEE ALSO AGRICULTURE AND FOOD	ONTARIO DEPT. OF PUBLICATION.

21 24

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110 111

F/C F/M
0 0 I

DOCUMENTATION CENTRE CODING SHEET

Country	Acr	Acr Rate	Organization	Year	Title	Form	Loc.	Srce	Lang	Subject	Feature	Sp. Lang.	Copy		Doc. Type	
			7204	21	1434	R										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

F/C	F/M		
6	I	NOTE AGRICULTURE AND FOOD	ONTARIO DEPT. OF PUBLICATION.
63	I	SEE ALSO AGRICULTURE PUBLICATION.	ONTARIO DEPT. OF

21 24

A Corporate Author cross reference is handled as follows:

Header Fixed Field:

F/C 00

F/M I

Country	the country of the CA being cross referenced
Part	the part of the CA being cross referenced
Province	the province of the CA being cross referenced
Organization	last two numbers of the year followed by the number of the month
Year	the day of the month
Title	the time expressed in hours and minutes
Form	R

The rest of the field is blank.

Data Variable Fields:

11I followed immediately by a corporate author

21I See - (or else See Also -) and then the other name for the corporate author. (The See is indented 3 spaces)

Corporate Author cross references must be made both ways in the case of a See Also.

FOR EXAMPLE SEE FOLLOWING PAGE

DOCUMENTATION CENTRE CODING SHEET

F/c	F/m	Country	Act	Rev Sets	Organization	Year	Title	Form	Loc.	Srce	Lang	Subject	Feature	Sp Lang.	Copy		Doc. Type	
0	I	CA	1		73	03	01	1600	R									
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

F/c	F/m	
1	I	STATISTICS CANADA
2	I	SEE - CANADA. DOMINION BUREAU OF STATISTICS

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MISCELLANEOUS CODING INFORMATION

BOUND VOLUMES OF SERIES

Some series include copies of individual numbers in bound volumes and also individual copies. Rather than try and catch all the duplicates, the Guelph system follows a special coding procedure for bound volumes of series. This eliminates the danger of duplicating a document code. Put a "W" at the end of the call number, and "BV" in the Feature code. (There is no reading room assigned the Location code "W".)

FRENCH LANGUAGE EDITIONS IN CANADA

Books are coded in the language they are printed in, but in Canada books are often published in both French and English editions. There is a danger therefore of a duplicate document code in a series. To avoid this a "Z" is placed at the end of the code number of a Canadian book published in French. (This is not necessarily done for books from Quebec because they often do not publish an English edition.)

SERIAL NAME CHANGES

A serial name change can be handled several ways. A new entry can be made but instead of following cutter number coding the last digit of the title number can be moved up by one number. Another method is to make a 23 entry on the original entry showing the new title. It is also possible to change the 22 line so that it shows one title, followed by "see also" and the other title. A 23 line would have to be done in the other direction. The most accurate holding records are achieved by the first method. The second method is the quickest but only works for one name change and doesn't show how the change is handled since the objective is to keep the books together on the shelf.

SERIALS UNDER A SERIES ORGANIZATION NUMBER

In several series, particularly from the US2, there are included serials usually annual reports. Previously there were coded as an item in the series. This has spread the serial on the shelf and made a repeating title entry.

If the serial is coded under the series organization number, with the year omitted and title cutter number and "B" in the Form code, the item will shelve with its series. It will appear in the Title Catalogue, and it also will be listed in the Serials Catalogue. In addition it will be in the Series Catalogue with a dummy series number based on the first five letters of the title.

HISTORY FILE

All books with an imprint date prior to 1960 (up to and including 1959) are in the history file and only the KWOC tapes incorporate both files, history and current. All serials are on the current file. Certain series that use a special system in the Year column are on the current file and the series cards tell which series these are.

It is impossible for the computer program to move an entry from the history file to the current file or from the current file to the history file. An entry must be deleted from one file and a new coding sheet made to enter it on the other file. This becomes necessary when a book is accidentally put on the wrong file. There are two complete sets of catalogues, except for the KWOC tapes, but the shelf order is not affected.

KWOC INDEX

The KWOC (Key Word Out of Context) Index is meant to replace subject headings in the coding. The Index is on a computer produced microfilm (COM file). The computer program takes all the titles and makes a list by key work, and all the titles

having a particular word in them are put in a list in alphabetical order. Any word which has more than 3 letters and is not on the stop list is a key word. This is entirely a computer operation and does not affect the coding. Additional key words can be added to the title when it is not relevant, (enrichment) but the Guelph collection has made this routine necessary very infrequently.

DATA VARIABLE FIELDS - INPUT ORDER

Each type of data variable has its own function code. It is not necessary to keep the function codes in numeric order on the coding sheet. (e.g. a 61 line can come before a 22 line.) However, if there is more than one line of any one function code, all lines of that function code must be together and in order. (eg. All the 22's must be consecutive.) The computer program will put the function codes in order in the shelf list.

RUN ORDER - DOCUMENT CODE CHANGES

Document code changes are run last. Therefore, if the document code is being changed at the same time as information in a data variable field, it is necessary to enter the change in the data variable field under the old document code number.

NUMBER SORTS IN A TITLE

When series numbers are being sorted for the series catalogue the numbers are first grouped by length, and then sorted in those groups. This means numbers of any length will come out in order. Numbers in the title catalogue are not sorted this way. Instead the numbers are read digit by digit; this leads to the following type of sort:

1
14
127
5
5677
58

If a book in parts or volumes contains more than nine volumes it will be impossible to sort in volume number order.

Titles with numeric characters at the beginning of the title will sort to the end of the title catalogue because letters file before numbers, For this reason, do not begin a title entry with numbers - shift them arbitrarily to the end or middle of the title.

CATALOGUES

The Document System generates seven catalogues.

Shelf List - All the material in document code order.

Corporate Author - All the material under the appropriate CA headings, with the headings in alphabetical order under the Part of the Country.

Title - All the material in alphabetical order by title.

Serial - All serials in order, first by corporate author and then by title.

Personal Author - All material with an author in alphabetical order by author.

Series - All material in series in series number order under the series headings in alphabetical order.

KWOC - All material by keyword in alphabetical order.

REVISIONS OR NEW EDITIONS

Monographs - A monograph that has been revised has the word "Rev." with the year written after the period in the title in the following format: (Rev.1972) There is no period after the bracket. Occasionally the fact that a monograph has been revised will also show in the document code. If there is more than one edition of a book the revised copy will receive the year of publication of the original instead of the year of publication, and a letter will be put at the end of the document code to represent the revision number.

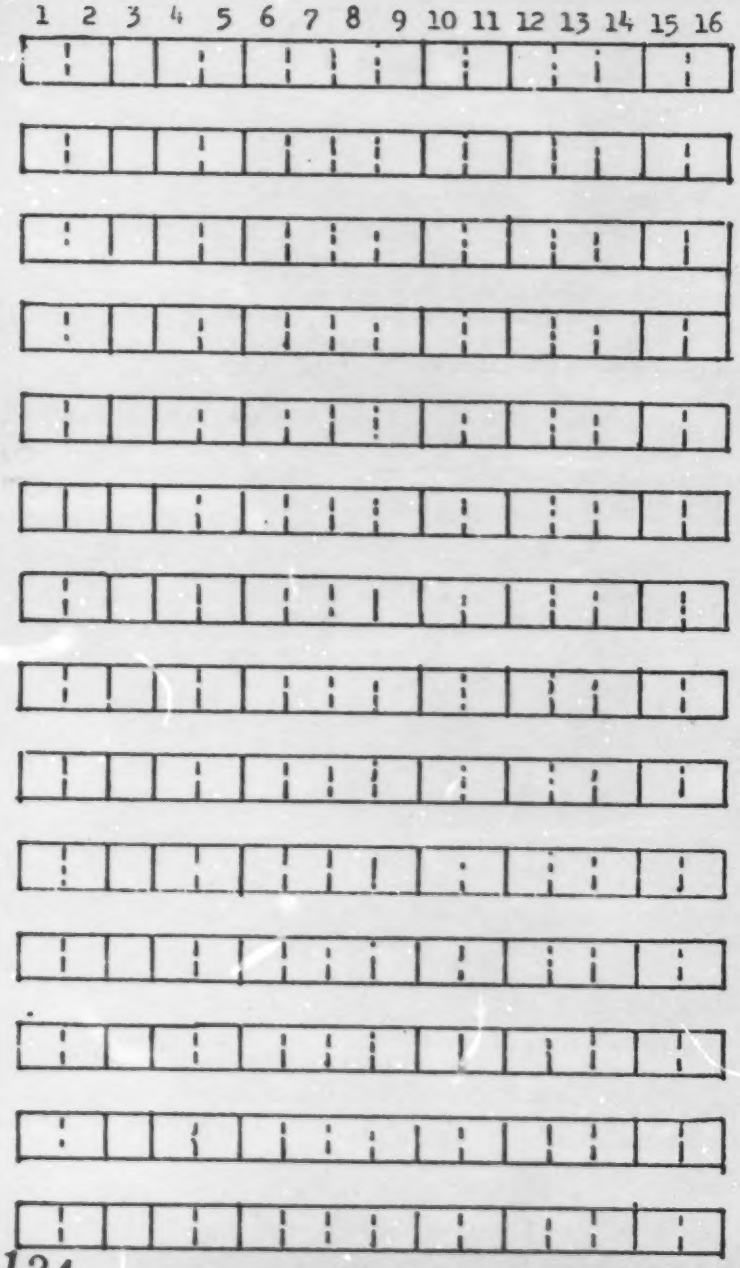
If the revision number is not known the letter at the end of the document code will be "C" for the first one, "D" for the second one, etc. This will put all editions of a book together on the shelf. If a book is revised and there is no other edition in the library no letter will be used at the end of the document code. (The letter is in the Emergency column and does not replace the last digit of the original document code.)

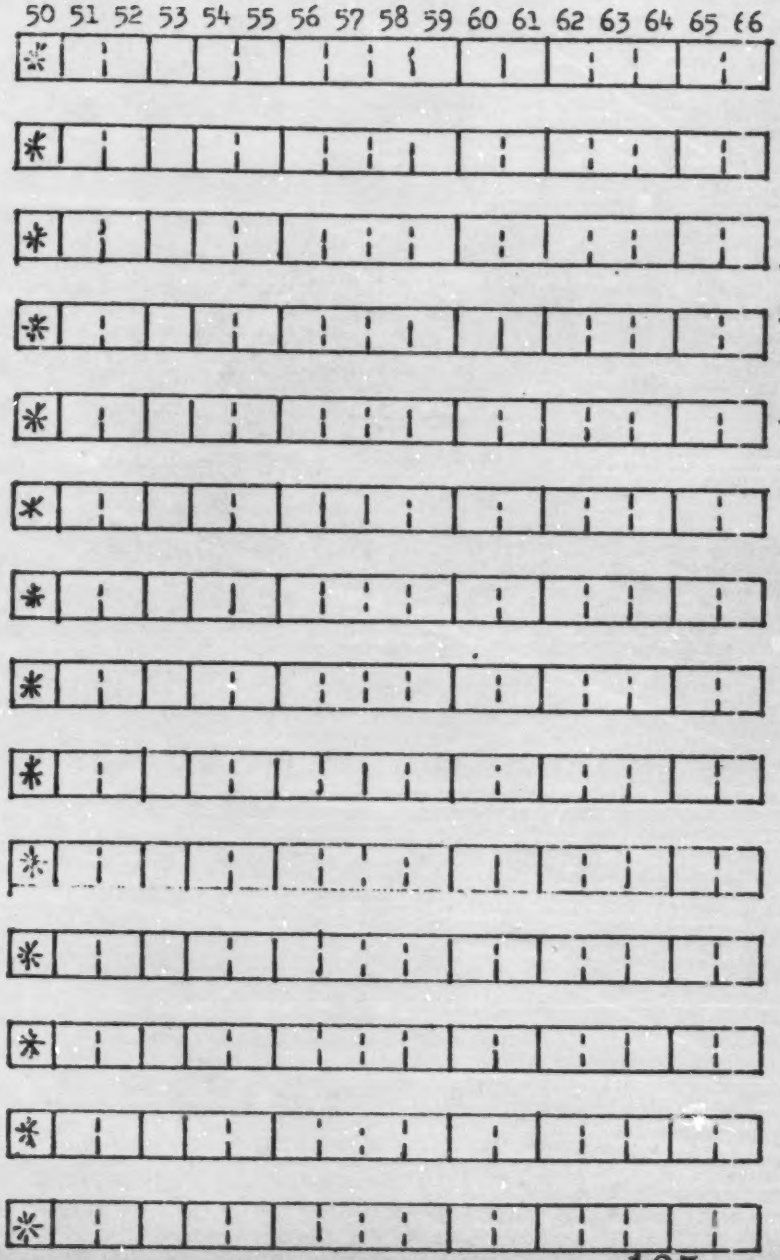
Series - Since the object of series coding is to keep the books in series number order, revisions to a series must be reflected in the document code. The year of the revision must be ignored and the year of the original edition used instead. If that is not known it can be deduced by studying the rest of the series. A letter is added representing the number of the revision and if the revision number is not known "C" is used for the first one received, "D" for the second unless its date is before the first, and then"B" or "A". This retains the approximate revision issuing order, although perfect order may not be possible. The word "Rev." is placed after the title, with the date revised in brackets; e.g., (Rev.1972) After the series number in the 61 line put "Rev." with the last two digits of the year revised in brackets, e.g., 659 (Rev.72) Count the number of digits in the series number and put that number in space 20 of the 61 line.

DOCUMENT CODE CHANGES

Document code changes are handled on a special coding sheet. The old code number is written on the left side of the sheet and the new one on the right side. These sheets are keypunched and not put on scanner paper. After a document code change has been made the new number is marked beside the old number in the shelf list. Document code changes do not move an entry from the current file to the history file, or from the history file to the current file.

FOR EXAMPLE SEE FOLLOWING PAGE





Call number change coding sheet - 30/11/70

TABLE I

COUNTRY CODES

AB	Albania
AF	Afghanistan
AG	Algeria
AR	Argentina
AS	Australia
AU	Austria
BA	Barbados
BE	Belgium
BI	Bolivia
BJ	Brazil
BL	Bulgaria
BM	Burma
BR	Borneo
C	Cambodia
CA	Canada
CE	Ceylon
CH	China (People's Republic)
CN	China (Taiwan)
CØ	Columbia
CU	Cuba
CZ	Czechoslovakia
DK	Denmark
FJ	Fiji
FL	Finland
FR	France
GC	Germany
GD	Germany (Federal Pepublic)
GE	Germany (Democratic Republic)
GH	Ghana
GR	Greece
GU	Guvana
HU	Hungary
ID	India
IE	Indonesia
IN	Iran
IQ	Iraq
IR	Ireland (Eire)
IS	Israel
IT	Italy
JM	Jamaica
JP	Japan
KE	Kenya
KR	Korea (Republic)
KU	Kuwait
LT	Liechtenstein
MA	Malagasy Republic
ME	Malaysia
ML	Malawi
MQ	Mexico
MR	Morocco
ND	Netherlands
NJ	New Zealand
NK	Nicaraqua
NM	Nigeria
NR	Norway
PA	Pakistan
PC	Panama
PE	Paraguay
PF	Peru
PH	Philippines
PL	Poland
PR	Puerto Rico
PT	Portugal
RU	Rumania
SA	Saudi Arabia
SC	Senegal
SE	Sierra Leone
SG	Singapore
SM	Somali
SØ	South Africa
SV	Swaziland
SW	Sweden
SY	Switzerland
TA	Tanzania
TH	Thailand
TT	Trinidad
TU	Turkey
UB	Uganda
UC	Ukrainian S.S.R.
UD	U.S.S.R.
UG	United Arab Republic
UK	United Kingdom
UN	United Nations
US	United States
YU	Yugoslavia
WS	Western Samoa
ZM	Zambia
ZZ	International Organizations

TABLE II

GENERAL PART CODES

1	Federal or Central Government
2	Provincial or States Governments
3	Counties and Regional Governments
4	Towns and Cities
5	National Institutions and Universities
6	Societies and Associations
7	Commercial Firms

TABLE III

PART CODES FOR THE UNITED NATIONS

UN	General
UN1	General Assembly
UN2	Secretariat and Secretary General
UN3	Councils
UN4	Committees and Commissions
UN5	Administrations and Boards
UN6	Dept., Offices, Sections, Bureaus and Library
UN7	Special Agencies
UN8	Conferences, Congresses and Seminars
UN9	Parallel Organizations

The part codes will be suppressed by the computer when it is sorting the corporate author catalogue.

TABLE IV

PART CODES FOR GREAT BRITAIN

UK1	Her Majesty's Government
UK2	Scotland, Northern Ireland, Wales
UK3	Counties and Regions
UK4	Towns and Cities
UK5	National Institutions, Universities
UK6	Societies and Associations
UK7	Commercial Firms
UK8	Commonwealth Organizations
UK9	Colonies and Protectorates

TABLE V

PART CODES FOR CANADA

CA1	Federal Government
CA2	Provincial Governments and Universities
CA3	Counties and Regional Governments
CA4	Cities and Towns
CA5	National Institutions
CA6	Societies and Associations
CA7	Commercial Firms
CA8	Canada-US Joint Commissions
CA9	Canada before Confederation

TABLE VI

PART CODES FOR THE UNITED STATES

US1	Federal Government
US2	State Governments and Universities
US3	Counties and Regions
US4	Cities and Towns
US5	National Institutions
US6	Societies and Associations
US7	Commercial Firms
US8	Overseas Territories

TABLE VII

PROVINCE CODES FOR CANADA

AL	Alberta
BC	British Columbia
MA	Manitoba
NB	New Brunswick
NF	Newfoundland
NT	NWT
NV	Nova Scotia
ØN	Ontario
PE	Prince Edward Island
PQ	Quebec
SA	Saskatchewan
YU	Yukon

TABLE VIII

STATE CODES FOR THE UNITED STATES

AB	Alabama	NA	Nebraska
AL	Alaska	NE	Nevada
AR	Arizona	NH	New Hampshire
AS	Arkansas	NJ	New Jersey
CA	California	NM	New Mexico
CL	Colorado	NN	New York
CØ	Connecticut	NØ	North Carolina
DA	Delaware	NR	North Dakota
FL	Florida	ØH	Ohio
GE	Georgia	ØK	Oklahoma
GU	Guam	ØR	Oregon
HA	Hawaii	PA	Pennsylvania
ID	Idaho	RI	Rhode Island
IL	Illinois	SC	South Carolina
IN	Indiana	SD	South Dakota
IØ	Iowa	TE	Tennessee
KA	Kansas	TX	Texas
LØ	Louisiana	UT	Utah
MA	Maine	VE	Vermont
MD	Maryland	VI	Virginia
MH	Massachusetts	WA	Washington
MI	Michigan	WD	Washington, D.C.
MN	Minnesota	WE	West Virginia
MP	Mississippi	WI	Wisconsin
MS	Missouri	WY	Wyoming
MT	Montana		

TABLE IX

YEAR CODE PREVIOUS TO 1900

A	164-
B	165-
C	166-
D	167-
E	168-
F	169-
G	170-
H	171-
I	172-
J	173-
K	174-
L	175-
M	176-
N	177-
Ø	178-
P	179-
Q	180-
R	181-
S	182-
T	183-
U	184-
V	185-
W	186-
X	187-
Y	188-
Z	189-

(eg. Z9 means 1899)

TABLE X

CUTTER NUMBER

ABC	1
DEF	2
GHI	3
JKL	4
MNO	5
PQR	6
STU	7
VWX	8
YZ	9

TABLE XI

LOCATION CODES

A	Animal & Poultry Science
B	Botany
C	Crop Science
D	Documentation Centre
E	Agricultural Economics
F	Physics
G	Mathematics & Statistics
H	Chemistry
I	Environmental Biology
J	Microbiology
K	Food Science
L	Landscape Architecture
M	Family Studies/Consumer Studies
N	Engineering
Ø	Psychology
P	Rare Book Room
Q	
R	Restricted Circulation
S	Land Resource Science
T	Horticulture
U	Nutrition
V	OVC
W	not be used
X	Extension Education
Y	Library - floors other than the basement
Z	Massey storage - the "Z" is not repeated at the end of the call number, as that indicates Canadian books in French.

TABLE XII

FEATURE CODES

Monograph or Series

BK Book (100-)
BL Booklet (50-99)
FD Folder
FØ Folio
FS Folding Sheet
LF Leaflet (1-10)
LL Loose Leaf
MF Microfische
MM Microfilm
PF Pamphlet (11-49)
2P 2-part set
2V 2-volume set
etc.
9V 9-volume set
MV Multi-volume set

Serial

WK Weekly
MN Monthly
QT Quarterly
AN Annually
BM Bi-monthly
BN Biennial
BW Bi-weekly
SM Semi-monthly
SN Semi-annual
IR Irregular

GOVERNMENT DOCUMENTS - OCR Input

Typing Instructions

1. Typewriter Set-up
   a. paper guide at 5
   b. left margin at 15
   c. right margin at 114
   d. impression selector at 3
   e. multiple copy control positioned forward
   f. line space lever at double spacing (away from typist)
   g. paper release lever positioned forward

2. Start each typed page on line 2 as follows:
   a. set black line of guide on perforation
   b. set spacing to double
   c. hit carriage return twice
   d. you are now on line 2

3. Fixed field information is typed on one line
   a. fixed fields are separated by a slash (/). Each number (1-19) represents the end of a fixed field
   b. It is not necessary to terminate field 19 with a slash since this field is the end of all the fixed information. Type a per-cent sign (%) only; therefore, each line of type which denotes fixed field data will contain 18 slashes and 1 per-cent sign
   c. if no data appears in a field the slash is typed only

4. Variable data begins a new line

   a. each line of variable data must contain the function code and file maintenance code in the first three positions
   b. when the function code changes, a new line is started

   c. a new document (00 record) must begin each page of typing; i.e., information for one document cannot span two pages
   d. if there are more than two consecutive blanks in the data, type arrows (↓↓↓) instead of spacing
   e. no typing within 3/4" of the bottom of the page

5. Error detection and correction

   a. all characters may be deleted with the christmas-tree ( ) except strike-overs, delete-line (—) character and vertical line (|)
   b. a line may be deleted by a typed delete (——) or a pen delete 1/8" from the first character for a minimum of 3/4".

6. Revision

   a. if an error is encountered in proof reading (variable) all the data for that function code must be deleted (not just the typed line which contains the error).
   b. the typist may then type the following to correct the data element in error:

(i) type fixed field line -
- field 1-8 only need to be typed in full; i.e. field 9-19 are typed as though no data is present
- the file maintenance code in this line (for this case only) must be blank

(ii) type variable information as before correcting error

c. if an error is found in the fixed field line the entire document must be deleted and retyped

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